

**THINKING FORMS IN IMAGES:
ARISTOTLE ON INTELLECTUAL CAPACITIES, ACTIVITIES, AND VIRTUES**

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University of Pittsburgh, 2016

Aristotle's active intellect has been a subject of much interpretive controversy over the centuries. Some have said it is the divine mind, others a god-like power of the human soul. Most begin by asking what the active intellect *is*; instead, I first ask what it *does*. Upon a close reading of *de Anima* III.5, I conclude that the active intellect activates or actualizes potentially intelligible objects, making them to be actually or actively intelligible for thinking. Accordingly, on my view, the active intellect is not responsible for initiating particular episodes of thinking for an individual, nor is it responsible for the intelligibility of the world in general. Rather, as I go on to argue, the active intellect plays a distinctive role in learning and discovery by making intelligible objects available for individual knowers. To understand this role more precisely, I consider Aristotle's idea that we learn by doing: not only do we become builders by building and brave by doing brave things, but we also get knowledge of triangles by thinking about triangles. In my investigation into his account of intellectual learning I draw on the *Posterior Analytics* and *Metaphysics*. I conclude that Aristotle distinguishes two sorts of intellectual activity when students are learning about triangles: they think about specific proofs in order to gradually grasp them, but they can also manipulate diagrams to discover proofs not yet considered, perhaps by drawing parallel lines or bisecting angles. This latter activity, by which students search for and uncover intelligible content in perceptual particulars, is the distinctive function of the active intellect. It is productive, then, like light, which does not create the color of things but rather reveals colored things as they already are. In doing so, however, the active intellect does not act as some intellectual spotlight, but rather as the familiar capacity to explore and move about one's world, a capacity to inquire that is shared by the toddler and the scientist alike. The active intellect therefore directs our perceptual engagement in inquiry, so that we may hunt down, discover, and consider the *correct* intelligible forms in the images.

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LIST OF ABBREVIATIONS

<i>APo.</i>	<i>Analytica Posteriora</i>
<i>APr.</i>	<i>Analytica Priora</i>
<i>Cael.</i>	<i>de Caelo</i>
<i>Cat.</i>	<i>Categoriae</i>
<i>de An.</i>	<i>de Anima</i>
<i>EE</i>	<i>Ethica Eudemia</i>
<i>EN</i>	<i>Ethica Nicomachea</i>
<i>Fr.</i>	<i>Fragmenta</i>
<i>GA</i>	<i>de Generatione Animalium</i>
<i>GC</i>	<i>de Generatione et Corruptione</i>
<i>HA</i>	<i>Historia Animalium</i>
<i>Int.</i>	<i>de Interpretatione (On Interpretation)</i>
<i>MA</i>	<i>de Motu Animalium</i>
<i>Mem.</i>	<i>de Memoria</i>
<i>Meta.</i>	<i>Metaphysica</i>
<i>PA</i>	<i>de Partibus Animalium</i>
<i>Phys.</i>	<i>Physica</i>
<i>Po.</i>	<i>Poetica</i>
<i>Pol.</i>	<i>Politica</i>
<i>Prot.</i>	<i>Protrepticus</i>
<i>Rep.</i>	<i>Platonis Respublica</i>
<i>Resp.</i>	<i>de Respiratione</i>
<i>Rhet.</i>	<i>Rhetorica</i>
<i>Sens.</i>	<i>de Sensu et Sensibilia</i>
<i>ST</i>	<i>Sancti Thomae Aquinatis Summa Theologica</i>
<i>Top.</i>	<i>Topica</i>

PREFACE

A student's debt to his teachers resembles a child's to his parents, and so can never be truly repaid. Nevertheless, I endeavor to thank them here in the best way I can muster, by indicating some question each encouraged me to ask. While each has influenced the present study in important ways, I am of course responsible for any misstatements or misappropriations of their thought.

First, I should like to thank my first philosophy teachers and mentors at the University of Notre Dame (for the beginning is more than half the whole). In our year-long reading of Plato's *corpus*, Prof. Jeffrey Langan first encouraged me to explore a Platonic conception of education in the *Republic*, one which includes both habituation (and perhaps even indoctrination) as well as a more reflective and dialectical program. Prof. David O'Connor first suggested to me that *Metaphysics* Θ might be a singularly important key to understanding Aristotle's contributions quite generally, since distinctions between potentiality, being-at-an-end (ἐντελέχεια), and being-at-work (ἐνέργεια) are exploited in interesting and indispensable ways across his thought. Finally, Prof. John O'Callaghan first suggested the merits of an Aristotelian-Thomistic conception of mind in view of more recent alternatives. He also first encouraged me to explore abstractionism and concept acquisition in Aquinas, Geach and McDowell. His own scholarly work perhaps most of all led me to—and indeed prepared me for—studies at the University of Pittsburgh.

At Pitt I have worked with many fine and brilliant philosophers, among the first are my two co-advisors. Prof. John McDowell first suggested to me both the perils and the appeal of the Myth of the Given (for as Chesterton says, he who has no sympathy with myths has no sympathy with men). His distinctive characterization of the problem—that capacities proper to our rational nature must already be operative in our getting what is gotten from perception—lies in the background of my argument in Chapter 3. Prof. James Lennox first encouraged me—also in view of his own work—to challenge interpretive views that have grown dominant concerning the *Posterior Analytics*, suggesting that scientific discovery for Aristotle results from a methodical and intellectually-driven inquiry, an idea which informs my Chapter 4. I am grateful to them both for their support, their engaging conversation, and their insight. Studying with them has been an honor and a delight.

I am also grateful for many fruitful and engaging conversations with Prof. James Allen who, early in my time at Pitt, led a seminar on the *Posterior Analytics* that was formative for my thinking about many of these issues. Similarly I have learned a great deal in seminars with Prof. Kristen Inglis on Aristotle's moral psychology. Also deserving of mention is Prof. Mae Smethurst, whose Greek seminar on the *Poetics* first invited me to consider the active intellect (νοῦς ποιητικός) as *poetic*, a thought lying in the background of Chapter 5. (I shall also never forget our reading the entire *Oresteia* together in another seminar: my Greek has not been stronger since!) Moreover, I always look forward to conversations with my outside reader, Prof. Sean Kelsey, on whom I depend to raise truly novel questions and approaches, both about my work and about philosophy generally. Finally, I thank Prof. Jessica Gelber, for her invaluable support in my final years of graduate school.

I also thank many other peers and colleagues—far too many to mention—both at Pitt and at other institutions, who have given comments and raised questions about my work. One deserves special mention, however: my friend and fellow graduate student at Pitt, Thomas Marré. In many ways and for many reasons I might not have made it without his friendship and tireless skepticism. In the often isolated and isolating enterprise of philosophy, it is helpful to have fellow travelers. In Tom I have found, in more ways than one, not only a fellow traveler but a fellow citizen and friend.

I am also grateful in a special way to my wife, Caitlyn. Just as fellow travelers are needed to accompany one along the way, so too are those to whom one can “come home.” Caitlyn reminds me of the importance of living out the complete human life that we Aristotelians so often emphasize in our scholarly work, and helps me to do so. As Aristotle says, those who purport to do philosophy by taking refuge in theory alone will never become well in soul, being like patients who only want to hear about—but not follow!—a prescribed course of treatment. Without Caitlyn and the family we have together I would be at grave risk for pursuing such a dangerous course of philosophy.

I am above all thankful for the instruction I received from my parents. Our home was always a place for discussion, debate, inquiry, and argument. My mother would often ask, usually in a literary context, “What is the unifying theme?” This, paired with my father's usual question, “But what if things had been different?” made me intellectually inquisitive from my earliest years. I might even suggest that my mother's question urged me to intellectually consider a form in the images, while my father's question invited me to manipulate the images themselves, and go on to consider the results. As will become clear, it is my view that both activities and both questions are indispensable to learning and discovery for Aristotle. For these and countless other reasons, I dedicate this work to them.

DEDICATION

S.D.P.M

To my mother, from whom I first gained a conviction about the facts,
and to my father, who first encouraged me to ask suitable questions about them.

μη λανθανέτω δ' ἡμᾶς ὅτι διαφέρουσιν οἱ ἀπὸ τῶν ἀρχῶν λόγοι
καὶ οἱ ἐπὶ τὰς ἀρχάς. εἶ γὰρ καὶ ὁ Πλάτων ἠπόρει τοῦτο καὶ ἐζήτει,
πότερον ἀπὸ τῶν ἀρχῶν ἢ ἐπὶ τὰς ἀρχάς ἐστιν ἡ ὁδός, ὥσπερ ἐν τῷ
σταδίῳ ἀπὸ τῶν ἀθλοθετῶν ἐπὶ τὸ πέρασ ἢ ἀνάπαλιν. ἀρκτέον μὲν
γὰρ ἀπὸ τῶν γνωρίμων, ταῦτα δὲ διττῶς· τὰ μὲν γὰρ ἡμῖν τὰ δ'
ἀπλῶς. ἴσως οὖν ἡμῖν γε ἀρκτέον ἀπὸ τῶν ἡμῖν γνωρίμων.

EN I.4 1095a31-b4

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.

Little Gidding V

1. INTRODUCTION AND *PRÉCIS*

ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο.¹

καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι,

ὁ δὲ τῷ πάντα ποιεῖν ὡς ἕξις τις οἷον το φῶς.²

This dissertation begins in both puzzlement and wonder, at two passages from Aristotle in particular. The first comes toward the end of Aristotle’s discussion of the acquisition of the immediate first principles of knowledge in *Posterior Analytics* B.19. There he concludes that, “the soul is so constituted so as to be capable of this process,”³ that is to say, the soul is such that it can accomplish the intellectual activity and achieve the intellectual state described in that passage. This intellectual activity, as he goes on to tell us, is or substantially involves induction (*ἐπαγωγή*), and the intellectual state that results from the sort of induction described is *nous*, understood here as an intellectual virtue by which we grasp the first principles.⁴ This passage has been the occasion for much commentary, since it appears that Aristotle saves the most difficult question until the end of the treatise and, having finally arrived at the end, he treats the question very briefly. For demonstrative knowledge to be possible, by Aristotle’s lights, some undemonstrated and

¹ *APo.* B.19 100a13-4.

² *De An.* III.5 430a14-16.

³ *APo.* B.19 100a13-4 (tr. Mure): ἡ δὲ ψυχὴ ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο.

⁴ Some have thought that *nous* in B.19 refers to a capacity for getting the first principles and not to the acquired state constituting the grasp of first principles. Part of the aim of this dissertation is to sort out the psychological relationship between *nous*-as-capacity (and if there are several, what they are) and *nous*-as-state, and how the two distinct but related notions are at work in difficult epistemological texts like *APo.* B.19. Cf. e.g. J.H. Lesher, “The Meaning of *Nous* in the *Posterior Analytics*,” *Phronesis* 18 (1973): 44-68.

indemonstrable *gnōsis*⁵ must also be possible.⁶ And yet Aristotle also insists (against innatism) that this *gnōsis* is acquired, though, to be sure, not by means of demonstration.⁷ For the treatise to amount to more than a mere epistemological hypothesis, Aristotle must give some plausible indication both that and how this prior *gnōsis* of first principles itself comes to be. It is at this climactic moment of the treatise’s final and most important argument that he almost curtly says: “the soul is so constituted so as to be capable of this process.”⁸

In making this claim, Aristotle points us to his psychology, in particular his account of the intellectual faculties in *de Anima* III (for surely those creatures with merely sensitive or even nutritive souls are not capable of achieving an intellectual grasp of first principles). But there we encounter a second passage which I have found independently puzzling, Aristotle’s claim that just as there are causal and material principles, or active and passive principles (ποιητικὰ καὶ παθητικὰ), in nature, so too do we find this distinction in the soul. Accordingly, Aristotle posits not only a receptive intellect analogous to our perceptual capacities, but also an active or productive intellect that “makes all things,” being “like light.”⁹ Determining precisely in what sense this second intellect counts as active or productive, and what it activates or produces, is no small matter: the verb *poiein* has a range of meaning that covers any number of concepts in English, including poetry, agency, action,

⁵ I shall use *gnōsis* transliterated throughout this dissertation. I avoid translating the term because I wish to set aside related but separable discussions of whether *gnōsis* is a success notion for Aristotle, best translated as “knowledge” (of a generic sort wider than *scientific* knowledge), or not a success term, best translated rather as “cognition.”

⁶ Cf. *APo.* A.3 *passim*, but especially 72b18-25: “But we say neither that all scientific knowledge is demonstrative, but that scientific knowledge of the immediates is undemonstrated (and that this is necessary is clear, for if it is necessary, on the one hand, to know scientifically the earlier premises from which the demonstration proceeds, and if on the other hand it is necessary that the immediates stop at some time, it is necessary that they be undemonstrated)—so on that point we speak in this way; we also say not only that scientific knowledge is something, but also the principle of scientific knowledge, by which we come to know the definitions.” Ἡμεῖς δὲ φάμεν οὐτε πᾶσαν ἐπιστήμην ἀποδεικτικὴν εἶναι, ἀλλὰ τὴν τῶν ἀμέσων ἀναπόδεικτον (καὶ τοῦθ' ὅτι ἀναγκαῖον, φανερόν· εἰ γὰρ ἀνάγκη μὲν ἐπίστασθαι τὰ πρότερα καὶ ἐξ ὧν ἡ ἀπόδειξις, ἴσταται δὲ ποτε τὰ ἄμεσα, ταῦτ' ἀναπόδεικτα ἀνάγκη εἶναι)—ταῦτά τ' οὖν οὕτω λέγομεν, καὶ οὐ μόνον ἐπιστήμην ἀλλὰ καὶ ἀρχὴν ἐπιστήμης εἶναι τινὰ φάμεν, ἧ τοὺς ὄρους γνωρίζομεν.

⁷ Cf. *APo.* B.19 99b20-32.

⁸ I repeat Mure’s translation here not because of its particularly accurate rendering of the Greek, but because of its elegant English.

⁹ Cf. *de An.* III.5 430a15-16.

performance and production. Moreover, one can *make* (ποιεῖ) something without qualification, or one can make it *to be* something or *to have* some feature. And indeed, given the long and varied history of epistemological inquiry from times before Aristotle up to the present day, we should like very much to know precisely in what sense this intellect “makes all things.”¹⁰

1.1 AN EPISTEMOLOGICAL FRAME

This passage from *de Anima* III.5 is fraught with interpretive difficulties and joins *Posterior Analytics* B.19 among the most disputed lines from the entire Aristotelian *corpus*. Indeed, to reach for *de Anima* III.5 in order to understand *Posterior Analytics* B.19 is something like leaping out of the frying pan and into the fire. And yet, such a move may be inescapable for those of us who have already braved the skillet. The broad motivation for this dissertation, therefore, is epistemological: “How must our souls be constituted so that we are capable of achieving knowledge of the highest sort?” I am ultimately interested in questions about how Aristotle must conceive of intellectual capacities in his psychology (especially in the *de Anima*) so that he can say the things that he does about intellectual states and activities in his epistemology (especially in the *Posterior Analytics*). Although this is the ultimate motivating principle and broader interpretive frame, the narrower argument of the dissertation itself proceeds in the reverse direction. The main question of the dissertation is rather: “What is the distinctive function of the active intellect (νοῦς ποιητικός) and what role does it play more generally in Aristotle’s thought?” As we shall see, my interpretation is informed by epistemological concerns, so that for the purposes of this dissertation, at any rate, Aristotle’s psychological account of intellect takes center stage, and his epistemology plays the supporting role. But, as I hope to show in the course of this investigation, these questions are inextricably linked, so that any interpretation of Aristotle in either context must be both constrained by and adequate to the other.

¹⁰ Without putting too fine a point on it, classical debates between rationalists and empiricists could be framed around how to understand this claim. Indeed, it has been noted that Aristotle often pulls us in both directions, and often in very close textual proximity. One way of understanding my project at the outset is determining precisely in what sense Aristotle is an empiricist, though I do not choose to set up the narrative of the dissertation in these terms.

So, from the outset I admit and indeed insist that my investigation is narrowly circumscribed by a determinate argumentative narrative. An account of the long and varied history of interpretation of the active intellect would already be too broad a topic for a single doctoral dissertation or monograph. Accordingly, in treating the history of this and related arguments, I must bring otherwise different interpretations under a handful of argumentative *genera*, in virtue of some broader similarity between them that is relevant for my peculiar purposes. Furthermore, there are several important interpretive considerations that I must treat briefly or even set aside entirely, since they do not bear in a significant way on the present study. A chief example would be the issue of the immortality or incorruptibility of individual intellectual souls, an issue that interpreters in every age have found important when considering Aristotle's account of intellect. While I readily and happily concede the importance of the topic, I nevertheless wish to investigate a different issue in relation to Aristotle's account of the intellect: I am concerned not with the metaphysics of personal identity, but rather with the epistemology of learning and inquiry. My concern is with what activity the active intellect accomplishes and what role it plays in his epistemology, not with what kind of substance the active intellect is. Notwithstanding such a disclaimer, my hope is that, having done this epistemological work focusing on the active intellect's *function*, we shall be in a better position to resolve perennial debates about its precise *nature*, which perhaps belong more to the province of first philosophy. But that work lies outside of the scope of this dissertation. Given the distinctively epistemological character of my investigation, then, much of the preceding commentary on Aristotle's active intellect must be set aside as not proximately relevant.

1.2 CHAPTER TWO: ARISTOTLE'S INTELLECTS

I begin in the second chapter with an interpretation of the active intellect of *de Anima* III.5 in relative isolation from other passages and concerns. The principal aim of this chapter is to specify the active intellect's distinctive role on the basis of local evidence alone. To be sure, Aristotle gives several descriptions of the active intellect in the chapter on the basis of which many have made claims about the active intellect's *character*; my interest, however, is what the two analogies of the chapter (i.e. with craft and with light) tell us about the active intellect's *characteristic activity*. Accordingly, these two analogies receive the most attention in the second chapter, and the more abstract descriptions of the active intellect are subordinated to this analysis. In short, I am less concerned with what the active

intellect *is* and more concerned with what it *does*: this function-first and activity-first analysis I take to be consistent with Aristotle's general method in the *de Anima*.¹¹

Of the two analogies, I take the comparison with light to be more illuminating. In fact, I suggest at the beginning of my analysis that a tension between the two analogies has been the source of much of the interpretive trouble, with most authors choosing to begin with an interpretation of the craft analogy and allow their reading of the light analogy to be constrained by it. I take the opposite approach, beginning with the light analogy and reading backwards to the craft analogy. The key argumentative move of this chapter of the dissertation is to reject a Contemporary Consensus to the effect that the passive and perishable intellect (παθητικός νοῦς φθαρτός) at the end of III.5 is the same as the receptive or potential intellect (δεκτικός νοῦς, νοῦς δυνάμει) of the preceding chapter, III.4. I give two arguments against this identification. First, the general descriptions of the intellects do not match, so that the receptive intellect of III.4 is never said to be passive (παθητικός), nor should we expect that it be perishable (φθαρτός). Although this is the weaker of the two arguments, it nevertheless counts in a general way against the contemporary view that the passive intellect *just is* the receptive intellect described in III.4. Importantly, this was a sufficient argument against the identification for many centuries, making it a view peculiar to recent interpreters.¹²

The present weakness of this first style of argument, however, introduces the need for a new kind of argument. In view of this need, my second argument sets up an inconsistent triad, showing that the light analogy suggests that light activates potential colors and not the visual faculty of a sighted animal. We might say that light activates visible objects *qua* visible, so that they can then go on to move and inform the receptive visual faculty of some animal. Analogously, then, the light analogy suggests that the active intellect activates potentially intelligible objects making them to be actually intelligible, so that those objects can go on to move and inform the receptive intellectual faculty. In this way, the active intellect's correlative patient is not, according to this analogy, the receptive intellectual faculty analogous to the faculty of sight. My argument gains further support from the fact that Aristotle does not mention vision in the light analogy at all, but rather the action

¹¹ Cf. *de An.* I.1 402b9-403a2. See also his own dual method at work in *de An.* II.1-2. For the most explicit endorsement of the objects and functions-first approach, see *de An.* II.4 415a14-22.

¹² I shall go into more detail in chapter two. For now, I note that despite their many differences, Averroes, Avicenna, and Aquinas all agree that the passive and receptive intellects are distinct. For a discussion of this issue, see Franz Brentano, *The Psychology of Aristotle*, trans. Rolf George (Berkeley: University of California Press, 1977).

of light on potential colors. Accordingly, I distinguish two active-passive pairs, (1) light acting on potential colors and (2) colors—now activated—acting on the visual faculty. So, the argument goes, the active intellect acts on potentially intelligible objects and not on our receptive intellectual faculty.

Furthermore, given that active and passive principles are correlated in Aristotle’s account, it follows that what is called “passive intellect” in III.5 should stand as patient in this intellectually illuminating activity. The receptive intellect of III.4 is analogous to our visual faculty, while the passive principle in III.5 is analogous to potential colors (in a way yet to be further articulated). The light analogy, as I have interpreted it at any rate, makes clear that the active intellect’s proper patient is *not* the receptive intellect, while the terminology of active and passive principles suggests that its proper patient *is* the passive intellect. The passive intellect, then, cannot be the same as the receptive intellect, against the Contemporary Consensus. The active intellect activates potentially intelligible objects for the receptive intellect, but like light it does not activate the receptive faculty directly: that constitutes a second and posterior relation between the receptive faculty and the object that has already been illuminated or activated for it, by light or by the active intellect respectively.

So, the active intellect activates potentially intelligible objects just as light activates potential colors (i.e. potentially visible objects). Despite its level of abstraction, we can still rule out most contemporary interpretations of the active intellect as a result of this chapter’s interpretive work. But two questions still remain unresolved in view of this abstract analysis of *de Anima* III.5 and of the active intellect’s distinctive role. First: what is the relationship between the “passive intellect” and these “potentially intelligible objects”? Second: what activity does “activating potentially intelligible objects” describe?

I end the second chapter by giving two hypotheses in answer to these questions, hypotheses that begin this dissertation’s epistemological turn. In reply to the first question, I suspect that potentially intelligible objects are images or perceptual *gnōseis* of some sort, and this thought is motivated by three considerations. First, Aristotle says at the end of III.4 that material objects are only potentially intelligible, suggesting that our perceptual *gnōseis* of particulars, insofar as they are particular and enmattered, would have potentially intelligible content. Second, Aristotle says later in *de Anima* III.7 that “for the intellectual soul *phantasmata* serve as perceptible objects (αἰσθήματα)”¹³ and in III.8 “for the *phantasmata* are just as perceptible objects (αἰσθήματα), except without the

¹³ *De An.* III.7 431a14-15.

matter.”¹⁴ These passages suggest that *phantasmata* are playing an analogous role as perceptible objects, such as colors, in the intellectual case. Finally, Aristotle insists in III.7 and III.8, as well as in the *de Memoria* and elsewhere, that there is no thinking without an image, that images are a necessary condition for all properly intellectual activity, for humans at any rate. Given these points, I begin my epistemological investigation with the hypothesis that the *illuminanda*, the objects to be acted upon by the active intellect, are images or perceptual *gnōseis* of particulars. On this hypothesis in reply to the first question, then, the “passive intellect” turns out to be *phantasia* or the perceptual faculty taken generally when it bears a certain relationship to intellectual activity, being that faculty in virtue of which intellect is supplied with its yet-to-be-intellectually-illuminated objects. *Phantasmata*, the perceptual *gnōseis* supplied by *phantasia*, are those cognitive items within which the intellect contemplates the universal forms.¹⁵ This is proposed simply as a hypothesis moving forward.

But even this provisional answer stands in need of further explanation in view of the second question: what does it mean for the active intellect to act on and, as it were, *illuminate* these images? What does it mean to *activate* the potential intelligibility of these perceptual *gnōseis*, especially if *qua* images they are already said to be “without matter”?¹⁶ This is where the epistemological turn is most pronounced, and where the epistemological program of the remaining chapters of my dissertation is most decisively determined. My hypothesis is that this activity, “activating potentially intelligible objects,” or “making the potentially intelligible to be intelligible in activity,” describes neither the immediate triggering of particular episodes of thought nor making the world intelligible in general, but rather some activity in between these. My hypothesis is that this activity—the distinctive activity and function of the active intellect—makes intelligible objects available for particular knowers, and so plays some role in the process of teaching, learning, and discovery. While the first hypothesis regarding *phantasia* remains in the background, the ensuing investigation is mostly informed by this second thought, that two distinct intellectual activities may be found in Aristotle’s account of learning, inquiry, and discovery, one receptive and another active or productive.

¹⁴ *De An.* III.8 432a9-10.

¹⁵ Cf. *de An.* III.7 431b3: “So, the intellectual faculty intellects the forms in the images.” τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ.

¹⁶ Cf. *de An.* III.8 432a9-10, *ut supra*.

1.3 CHAPTER THREE: LEARNING BY DOING

In view of this second hypothesis, in the third chapter I consider Aristotle's account of learning in general, the acquisition of both ethical (or habituated) and intellectual virtues. I work to reconcile two claims that are commonly attributed to Aristotle. In the first place is (what I am calling) Aristotle's Learning Principle, the idea that we always learn by doing the very thing we are learning to do. We come to be house-builders by building houses, lyre-players by playing the lyre, temperate by doing temperate things, courageous by doing courageous things, and indeed, knowledgeable by doing knowledgeable things. This last point is perhaps the most controversial, so I spend some time substantiating the idea that, for Aristotle, even in the case of dianoetic or intellectual virtues like *epistēmē* we come to possess knowledge of geometry or grammar by performing the intellectual acts of the geometer or the grammarian. Though, indeed, in all of these cases the student does not engage in these prior activities in the same way as the expert: to insist on this would be straightforwardly incoherent. Rather, for Aristotle, all learning is a process resulting in a settled state or *hexis* of a capacity, rather than a new capacity altogether.

And here we encounter the second claim commonly attributed to Aristotle: before one learns one is at first potentiality, at which stage one is merely capable of acquiring an actual capability to φ , but not yet capable of φ -ing in any respect. First potentiality, as it is typically described, is a capacity for acquiring a further capacity, being merely a "raw capacity" or a potentiality whose only actualization is in the acquisition of an actual capability, coming to have a capacity in the true sense. On this model—what I am calling the Standard View—only after one learns has one become capable of engaging in the relevant activity, now for the first time. But this conflicts with Aristotle's explicit commitment to the Learning Principle described above. My suggestion is that we should understand first potentiality not only as a capacity for development, but also as a capacity for engaging in the appropriate unrefined activity. The apprentice house-builder at first potentiality must already be capable of house building in an unrefined way, otherwise he would not be able to learn to build houses *by building houses*. The capacity to learn, then, must already be a capacity to engage in the very activity one is learning to do, although as yet in an unrefined way.

But this raises questions about who or what is responsible for *successful* learning: although prior activity on the part of the student is absolutely necessary for the student to learn anything at all, it does not seem to be a sufficient condition for successful learning. Indeed, one worry coming out of this third chapter is that Aristotle, when defending his Learning Principle, also insists upon

the necessity of chance or another's instruction to guide the student's prior activity.¹⁷ And even when Plato insists upon a similar point, with Socrates' remark that education is not like putting sight into blind eyes, the point is made within an educational context.¹⁸ That is, although both Aristotle and Plato insist that the student must already be capable of intellectual activity of an unrefined sort in order to be capable of learning at all, this point is not made in order to rule out the teacher's role but rather to specify and determine the teacher's role in more precise terms. The teacher's activity gives shape to the student's own prior intellectual activity, making it to have the right sort of character. The apprentice who is learning his master's art is not a mere tool of the master whose activity is entirely derivative of him. No, on my view, when a master "uses" an apprentice to build a house, one of the chief aims is for the apprentice to come to share in his master's art. Similarly, the student who is learning from a teacher must himself be engaged in the relevant sort of theoretical activity: the teacher guides and shapes the student's activity so that he eventually achieves a theoretical grasp for himself.

The upshot of this chapter's argument is generic and applies to all acquired states and every case of learning: the so-called Triple Scheme of actuality and potentiality should not imply that first potentiality is incapable of actualization in activity until it has been perfected at the stage of first actuality. If we were to insist upon this, Aristotle would not have the resources to defend his Learning Principle. But if we understand first potentiality in a more nuanced way, taking it to be directed toward both unrefined activity and its own development as a capacity, Aristotle would then have the resources to defend his Learning Principle: the paradox generated by his insistence that we learn by doing is dissolved if learning is understood as getting better at what we can already do. After all, the so-called acquired capacities are all states or *hexeis* by Aristotle's lights, and not new capacities (*δυνάμεις*) without qualification.

1.4 CHAPTER FOUR: TYPES OF PRIOR INTELLECTUAL ACTIVITY

The third chapter has a more determinate upshot for our purposes, however; although I maintain that the preceding lesson about first potentiality holds for all acquired states and virtues, and thus

¹⁷ Cf. *EN* II.4 1105a22-26.

¹⁸ Cf. *Rep.* VII 518b-c.

for every case of learning, I am here most interested in the acquisition of intellectual states and virtues, which, Aristotle says elsewhere, always comes about from a preexisting *gnōsis*.¹⁹ If the requirement of prior activity holds generically of all learning, the need for preexisting *gnōsis* holds specifically of intellectual or *dianoetic* learning.²⁰ It is to this more specific set of concerns that I turn in the fourth chapter. We might capture the upshot of the preceding chapter for the intellectual case in the following terms: even before one learns, one must already be capable of engaging in the relevant intellectual activity, which is perhaps a kind of receptive intellectual consideration of some universal intelligible form. Even before one comes to grasp the nature of triangles, eclipses, or frogs, one must already be capable of contemplating or intellectually considering (θεωρεῖν) triangles, eclipses, or frogs. After all, it is only by and through intellectually considering triangles, eclipses, or frogs that we can ever learn about triangles, eclipses, or frogs: for, as I have argued in the third chapter, we learn by doing the very things we are learning to do. So, the student must be already capable of performing this receptive intellectual activity before he learns, though indeed not yet in the settled, deliberate, or refined way of the expert.

Moreover, we should characterize the teacher’s role in the process of teaching and dianoetic learning as guiding and giving shape to this receptive intellectual activity on the part of the student. Whereas in cases of mere habituation teachers give shape to the student’s bodily motions or even to his desires by the use of pleasure and pain, in those cases the teacher does not (as such) give shape to any intellectual activity. What is sought in the case of dianoetic learning is the acquisition of a dianoetic or intellectual virtue, an excellent and stable disposition of the intellectual faculty, which Aristotle agrees is, in a sense, “a place of forms (τόπον εἰδῶν).”²¹ But how does a teacher guide and shape such a faculty’s activity on the part of the student? And how is this related to the principle that all dianoetic learning and teaching proceeds from a preexisting *gnōsis*?

¹⁹ Cf. *APo.* A.1 71a1-2: “All teaching and all dianoetic learning comes to be from a preexisting *gnōsis*.” Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως.

²⁰ It is my view, introduced here in the fourth chapter and defended at length elsewhere, that the modifier “dianoetic” in the opening sentence of the *Posterior Analytics* specifies the acquisition of any of the five genera of dianoetic or intellectual virtue named in *APo.* A.33 and *EN* VI. That is, “dianoetic learning” in *APo.* A.1, on my view, does not refer exclusively to the acquisition of theoretical or speculative virtues of intellect, but also to the acquisition of *technē* and of *phronēsis*.

²¹ Cf. *de An.* 429a27-29. The definite article is not used here, despite the usual translation “the place of forms.” This is interesting given the Platonic background, though I must set this interesting issue aside for the present study.

In order to answer these pressing questions, I propose a detailed study of the acquisition of one genus of intellectual virtue in particular, *nous* or the grasp of first principles, the topic of discussion in *Posterior Analytics* B.19. While I am confident that my account can apply in interesting ways to the acquisition of the other genera of intellectual virtues (that is, to arts, sciences, and perhaps even to *sophia* and *phronēsis*), I choose to focus on the acquisition of *nous* because of its intimate connection with perception and the perceptual faculty.²² Indeed, the acquisition of *nous* creates a special problem for Aristotle since he does not regard the first principles as innately possessed, either explicitly or implicitly. Rather, he takes it that these first principles must be acquired. Here is the difficulty: since they are *first*, there can be no *higher gnōsis* from which they proceed, deductively or otherwise. But since they are acquired, they must proceed from *some* preexisting *gnōsis*. Put differently, from what further *gnōsis* can these *gnōseis* proceed, if they are to be first and highest? This is, of course, the subject matter of one of the two puzzling chapters with which this dissertation begins, *Posterior Analytics* B.19. The soul is so constituted to be capable of grasping the first principles—of achieving the highest *gnōsis*—from lower-level perceptual *gnōseis*.

So, in the first place I propose a new interpretation of B.19 according to which perceptual *gnōseis* and memories without qualification are capable of producing *logoi* without qualification. That is to say, *empeiria*, on my view, is not necessary to arrive at a universal account in general. Rather, throughout the process of inquiry, *logoi* are arrived at inductively on the basis of perceptual *gnōseis* and refined gradually until one finally achieves the *orthos logos*. They are not refined in isolation from perceptual engagement, however: for *logoi* to have content they must be refined on the basis of more extensive and finer grained perceptual *gnōseis*, and this perceptual process terminates in *empeiria*. That is to say, on my view *empeiria* is that excellent perceptual state from which a knower can induce the *orthos logos*, the first principles of a given domain. Accordingly, the *orthos logos* constituting the grasp of first principles in a way proceeds both from *empeiria* and from some penultimate *logos*—we can

²² I consider these to be genera of intellectual virtues because there are many arts, many sciences, and many first principles or sets of first principles to correspond to them. While *sophia* and *phronēsis* are themselves virtues, they are also *sui generis* in an interesting way; I only mean to suggest here that *nous* is not a single virtue like *sophia*, but rather a class or kind of virtue like *technē* or *epistēmē*. The first principles of astronomy are possessed by someone with the *nous* of astronomy, just as astronomical demonstrations are possessed by someone with the *epistēmē* of astronomy (cf. *APr.* A.30 46a17-28). Similarly also with the various *technai*. Although this dissertation focuses almost exclusively on the acquisition of noetic virtues (those belonging to the genus of intellectual virtue called “*nous*”), I hope to show in future work how my account of dianoetic learning would apply to the practical and productive domains as well.

trace two progressions to the *orthos logos*, one that is entirely at the level of *logoi* that come to be more and more determinate and refined, and one at the level of perception which terminates in *empeiria*. The *orthos logos* can rightly be said to follow from both cognitive progressions but in a different way, explaining Aristotle's remark that the *orthos logos* proceeds "from *empeiria* **or** from the whole universal having come to rest in the soul."²³

The most basic piece of evidence for this interpretation is the possibility of *logoi* that issue from *inexperienced* perceptual *gnōseis*. Because Aristotle is explicitly committed to the idea that *logoi* and their attendant intellectual activity (θεωρεῖν) are possible even at the early and inexperienced stages of inquiry, it becomes clear how his account must allow for a progression and development at the level of *logoi* which mirrors inductively one's development at the level of perception. Interestingly, *empeiria* seems to itself be a product of an intellectually driven process, although it is as such an excellent state of the perceptual (and not of the intellectual) faculty. This has further implications for some difficult passages, in particular *Prior Analytics* B.21 and *Physics* I.1, both of which in their own way suggest a progression from universal *logoi* to *logoi* that are specific, proper, or particular.

With this new reading of *Posterior Analytics* B.19 in place, we can fruitfully reflect upon the two questions of this chapter. How does a teacher guide and shape the intellectual faculty's activity? And how is that teaching activity related to the principle that all dianoetic learning proceeds from a preexisting *gnōsis*? On my reading, the teacher produces for the student a privileged perceptual *gnōsis* in and from which the student can intellectually grasp the relevant intelligible form. As in Plato's *Meno*, the teacher manipulates images and makes certain features perceptually available for the student, and thereupon directs the student's intellectual attention to these features with appropriate questions and suggestions. The goal—consistent with the results of the third chapter—is for the student to perform this receptive and theoretical intellectual activity himself; the teacher's contribution is to facilitate and give proper shape to this activity, not to supply it directly for the student. The teacher, then, makes use of the prior perceptual *gnōseis* in order to facilitate this process, making it so that the right sorts of features are perceptually available and clear, and thereby also intellectually available and clear for properly intellectual consideration (θεωρεῖν). The latter activity is accomplished by asking suitable questions about perceptual particulars from a suitable perspective.

²³ *APo.* B.19 100a6-7. There will, of course, be much argumentation needed to justify this move, and there will be several important qualifications on the view. Here I am simply giving a sketch by way of introduction.

So we find that there are two distinct activities in the learning process, a more receptive activity whereby the student intellectually considers some universal form in and from a particular perceptual *gnōsis*, and a more productive activity whereby the teacher makes the right perceptual *gnōsis* to be available for the student in the right sort of way. The teacher first and most directly shapes this perceptual *gnōsis* for the student and thereupon, through questions and suggestions, can be said to occasion the student's intellectual grasp of the correct universal in the particular rightly conceived, thinking the correct form in the image seen in the right way.

1.5 CHAPTER FIVE: ACTIVITIES IN INQUIRY AND DISCOVERY

The fifth chapter begins with a more detailed consideration of the distinction with which the fourth chapter ended. There, we were left with an intuitive distinction between the student's intellectual contribution to the learning process, a kind of receptive activity, and the teacher's contribution, a kind of productive or active activity. How these activities relate in cases of discovery is yet unclear, however, since presumably the person who is actively inquiring without the guidance of a teacher must achieve the same perceptual states that the teacher facilitates in cases of guided learning, and their very *perceptual* development must be driven by intellectual questions and concerns, at least in the paradigmatic cases of inquiry and discovery that proceed according to an ordered method. This raises questions about the concept of inquiry in Aristotle, that process which produces increasingly promising perceptual *gnōseis*, and, by induction, increasingly precise *logoi*. On my view, the eventual achievement of the excellent perceptual *gnōsis* of *empeiria* is not merely a perceptual process, especially in cases where there is no teacher to help things along, although *empeiria* as such seems to be a perceptual product of such a complex process.

Indeed, one of the difficulties of interpretation in B.19 is how induction alone could achieve the highest intellectual states.²⁴ In view of these questions and considerations, I propose the

²⁴ For example, both the exegetical reading (cf. e.g. Ross (1964)) and corrective reading (cf. e.g. Charles (2002)) of the infamous “or” in B.19 suggest that the first principles proceed from the “whole *logos* having come to rest in the soul.” For the exegetical interpretation, this whole *logos* just is *empeiria*, while for the corrective interpretation, this whole *logos* is some further intellectual state beyond *empeiria*. Both views maintain that the first principles proceed from something logically universal, making it puzzling why Aristotle should say quite explicitly that the first principles are gotten by induction, an inference which proceeds from something logically particular. Although Aristotle does speak of induction at different levels of analysis among things that are all logically

following: there is a distinction between two kinds of induction which runs parallel to Aristotle's distinction between deduction (συλλογισμός) without qualification and demonstration or demonstrative deduction (ἀπόδειξις). Both are formally deductions, but only demonstrations are productive or expressive of scientific knowledge, of the relevant *orthos logos*. In the deductive case, the difference between a merely formally valid deduction and a robustly demonstrative deduction is *material*: Aristotle describes early in *Posterior Analytics* A the several characteristics premises must have in order for a deduction issuing from them to be demonstrative, that is, for it to produce or express scientific knowledge.²⁵ I propose that there is a similar formal/material distinction in the inductive case without correspondingly explicit terminology. I suggest that there are merely formal inductions which are simply universal generalizations on the basis of some particular *gnōsis*, and there are those inductions which are productive of the *orthos logos* due to the adequate character of the logical inputs. Just as in the deductive case what makes a given deduction to be demonstrative is the character of the premises, and not some additional formal step, so too in the inductive case what makes a given induction to be productive or expressive of first principles is the special character of the particulars from which it proceeds.

So on my reading, “induction” is always and everywhere in Aristotle a move from particulars to universals, either producing or expressing a universal form within a particular image. Sometimes, however, “induction” means something more robust, resulting not in just any universal *logos* on the basis of just any *gnōsis* of particulars, but rather the *correct logos*, the *orthos logos* constituting the intellectual grasp of first principles. It is this sense of “induction” that we see in *Posterior Analytics* B.19. Accordingly, unlike most other readings of B.19, I do not see the need for some further intellectual activity or logical step that follows upon induction properly so-called, leading us to grasp the principles *as principles*, for example.²⁶ Rather, on my view the hard intellectual work precedes this final and correct induction by the intellectual activity driving perceptual engagement, producing the excellent perceptual *gnōsis* from which this final induction can proceed, namely *empeiria*. But how

universal (e.g. different triangles to triangle as such), it is clear that the inductive inputs here ought to be logically particular, given the perceptual *gnōsis* from which these inductions ultimately proceed.

²⁵ Cf. *APo.* A.2 *passim*.

²⁶ See, for one early example, Kosman “Understanding, Explanation and Insight in the *Posterior Analytics*,” *Phronesis* Supp. Vol. I: *Exegesis and Argument* (1973): 374-92, especially 383–85.

ought we to characterize, in general terms, this robustly *intellectual* process that produces this excellent perceptual state, perhaps most of all in cases of discovery?²⁷

When considering cases of discovery in *Metaphysics* Θ.9, cases in which the unique achievement of inquiry is most clearly seen, Aristotle says that a given geometrical proof would be clear if the necessary parallel line had already been drawn. That is to say, if the diagram had already been sufficiently manipulated and appropriately divided, the correct universal form would already be available to consider in the concrete diagram. Such a case might obtain with a teacher's help, to be sure. But the interesting case for discovery, Aristotle suggests, is one in which the diagram has not yet been manipulated or divided, so that the student himself must come to discover the best way to divide the diagram. Aristotle finds this interesting for metaphysical reasons, since in the case of discovery one seems to bootstrap oneself, as it were, from potential knowledge to actual knowledge, a possible counterexample to the general priority of *energeia* to *dynamis*.²⁸ The geometrical case, because of its relative simplicity, helps to isolate these conceptually distinct intellectual activities: first, the achievement of the correct perceptual grasp of the diagram, then the achievement of the correct intellectual grasp of the proof. The second activity is straightforward contemplation (θεωρεῖν), the receptive intellectual activity we have been considering all along; but the first activity is something different, being productive in a way that makes available something to be contemplated or intellectually considered that was not previously so available.

At this juncture, readers may be suspicious that I have biased my exposition of the epistemological upshot in Θ.9 to favor the psychological hypothesis with which I began. I have located two activities in the learning process, one receptive and another productive, and this is precisely what I was hoping to find. But it is not entirely without reason that I should make this move: as I show in chapter five, Aristotle uses the very same language in *Metaphysics* Θ.9 to describe this productive intellectual activity in drawing the parallel line as he uses to describe the active intellect in *de Anima* III.5. I conclude that the active intellect's activity is to work on and, indeed, *produce* images so that the right universal form can be contemplated in the particulars rightly conceived. This productive activity is to make something available for intellectual consideration without as such initiating particular episodes of receptive theoretical consideration. The active

²⁷ I say “in general terms” because each domain will have peculiarities of method appropriate to it, and these peculiarities are not the focus of this dissertation. I hope in future work, however, to explore the implications of my general view for particular domains of inquiry.

²⁸ Establishing this general principle was the purpose of the preceding chapter, *Meta.* Θ.8 *passim*.

intellect, then, is our ever-active state of inquiry, of constantly searching for a universal explanation between and among particular images, searching among appearances for that privileged perspective in which the reality can be most clearly and adequately grasped and considered.

I end with a consideration of a few remaining issues of interpretation which follow upon this view. First, there are questions about the interplay between the three intellects involved in this process, including how to read the craft analogy of III.5 on my account. Second, there are questions about the role of Aristotle's god and whether this active intellect could still be the divine substance, given the results of the epistemological investigation. Finally, there are questions about the intermittence of human thought given the purported non-intermittence of the active intellect's distinctive activity.

1.6 LET THE INQUIRY BEGIN

But now we must return to and begin at the beginning, with an investigation into the text of *de Anima* III.5 itself. Although the more determinate question of the dissertation concerns Aristotle's philosophical psychology—in particular the precise function of the active intellect—it is important to remember the project's distinctively epistemological focus even in the second chapter. Perhaps, having begun in wonder at the claims and conclusions of *de Anima* III.5, by the end of this dissertation and its epistemological inquiry, we might return to where we started and know the place for the first time.

**2. WHAT DOES ACTIVE *NOUS* ACTIVATE?
TOWARD AN INTERPRETATION OF *DE ANIMA* III.5**

Ἐνούσης που ἐν ὄμμασιν ὄψεως καὶ ἐπιχειροῦντος τοῦ ἔχοντος χρῆσθαι αὐτῇ, παρουσίας δὲ χρώας ἐν αὐτοῖς, ἐὰν μὴ παραγένηται γένος τρίτον ἰδίᾳ ἐπ’ αὐτὸ τοῦτο πεφυκός, οἴσθα ὅτι ἢ τε ὄψις οὐδὲν ὄψεται, τὰ τε χρώματα ἔσται ἀόρατα.

--- Τίνος δὴ λέγεις, ἔφη, τούτου;

ἽΟ δὴ σὺ καλεῖς, ἦν δ’ ἐγώ, φῶς.

--- Ἀληθῆ, ἔφη, λέγεις.

Οὐ μικρᾷ ἄρα ἰδέα ἢ τοῦ ὀρᾶν αἴσθησις καὶ ἡ τοῦ ὀρᾶσθαι δύναμις τῶν ἄλλων συζεύξεων τιμιωτέρῳ ζυγῷ ἐζύγησαν, εἶπερ μὴ ἄτιμον τὸ φῶς.²⁹

The argument of this chapter is somewhat abstract, insofar as I propose to consider, in a general way, the several intellects that Aristotle discusses in *de Anima* III—the several things there called *nous*—without presently considering all of the details of the objects and operations of these intellectual powers. I shall consider various views about how to understand the so-called “active and passive intellects,” arguing against several prominent proposals on the basis of the functional descriptions and analogies Aristotle gives, especially the Light Analogy of *de Anima* III.5. What results is, in the first place, a certain shape of Aristotle’s intellectual account and a general orientation according to which one intellectual power is posited as relating to another in certain predictable Aristotelian ways, that is, as form to matter or as agent to patient. Thus, the purpose of this chapter is simply to propose and defend a general picture, with various details left to be discussed as the dissertation unfolds; the program of the balance of the dissertation will be determined by questions that remain at the end of this preliminary discussion.

²⁹ *Rep.* VI 507d11-508a2.

More precisely, I begin this interpretive project by raising the question “what does active intellect activate?” or perhaps “what is the active intellect’s distinctive activity or proper function?”³⁰ These questions immediately arise upon reading the infamously difficult fifth chapter of *de Anima* III, though perhaps not specified precisely in these terms. To be sure, every reader and every interpreter of the chapter seeks to explain the role belonging to that “*nous* in virtue of its making all things.”³¹ What is distinctive to the approach I am proposing, however, is that I begin with an investigation into its distinctive function rather than with Aristotle’s more abstract descriptions of the active intellect’s character and peculiar nature. While others also address its function, they do so only after making interpretive decisions about the active intellect’s character; I give interpretive priority to the functional question.³² So, as will become clear, my analysis focuses on Aristotle’s technical vocabulary of active and passive principles (ποιητικόν and παθητικόν) and in particular how these are at work in the analogy with light, revealing the active intellect’s distinctive activity.

Against the background of Aristotle’s speculative philosophy quite generally, these correlative terms bear a precise meaning: active and passive principles come together in some activity or motion appropriate to them.³³ That which can cut and that which can be cut come together in the jointly unified process of cutting-and-being-cut. That which can heat and that which can be heated come together in a single process of heating-and-being-heated, a single activity that is one in number but different in form, differing from the agent’s or patient’s perspective.³⁴ Similarly also that which can see and that which can be seen come together in the joint and unified activity of seeing and being seen.³⁵ So, when Aristotle introduces an active, agent, or *poetic* principle (ποιητικόν) in the intellectual case—that *nous* in virtue of its making all things—it is appropriate to frame our puzzlement and to conduct our further investigation in response to the following question: what does this active *nous* activate? What is its distinctive productive activity (ποιεῖν)? What is its

³⁰ While distinct, given Aristotle’s method of analysis they will be answered in turn. Identifying the correlative object of the active intellect’s activity is bound up with specifying that activity as such.

³¹ Cf. *de An.* III.5 430a14-15.

³² Kosman (2003) is a nice exception to this trend in his “What Does Maker Mind Make?” Although I disagree with his conclusions, we share a similar interpretive method.

³³ Cf. *Phys.* III.1-3, especially at 202b5-22.

³⁴ Cf. *Meta.* Δ.15 *passim*.

³⁵ Cf. *de An.* III.2 425b26-426a26.

correlative passive intellectual principle (παθητικὸς νοῦς)? And what is their single, unified intellectual activity (ἐνέργεια)?

My approach differs, therefore, from much recent commentary in that I am giving priority to a question about the active intellect’s distinctive activity. Neither my initial nor my eventual aim is to settle questions about whether the active intellect is the divine intellect or the human intellect, nor again whether it is one aspect of a single human intellect or a distinct intellectual principle within the human soul.³⁶ Accordingly, I am even less concerned, at least at the outset, with how the active intellect bears on questions of the (in)corruptibility of the human soul in Aristotle’s view, nor how the active intellect has been exploited throughout the ages with respect to this issue.³⁷ Although my “activity-first” analysis will have implications for these questions, I choose to begin with questions about the active intellect’s distinctive activity and the nature of its activation or production (ποίησις), and further what it is that it activates or produces. I choose this method in part because it is oftentimes Aristotle’s own: we come to know psychic faculties by first studying their activities and the objects of these activities.³⁸ This method is also recommended due to the difficulty of the topic and the intractability of the debate: by giving priority to questions of this sort—what does active *nous*

³⁶ These points notwithstanding, it may be that I have something to say briefly and in outline about these questions at the end of this dissertation.

³⁷ It is common to suggest that, for Aristotle, if the human soul is incorruptible it is in virtue of the active intellect. This view is sometimes attributed to medieval Christian interpretations of Aristotle, like Aquinas, although I think this is an incorrect attribution. For example, see Shields (2016c), in his supplement to “Aristotle’s Psychology” on the active intellect of III.5: “Christian exegetes tend to see it as a vindication of the compatibility of personal immortality and soul-body hylomorphism,” on which point he cites Aquinas, and by my lights mistakenly so. I set this issue aside when considering the active intellect because I am much more sympathetic with the idea that for Aristotle (and for interpreters like Aquinas) the incorruptibility of the human soul has more to do with the potential or receptive intellect discussed in III.4, where Aristotle gives arguments about its organ-less nature and activity. On this question see Coho (2013). To keep with our example of a “Christian exegete,” all of the arguments Aquinas gives about the incorruptibility of the human soul concern the impassibility and incorruptibility of the potential or receptive intellect, discussed by Aristotle in *de An.* III.4. So even if it turned out that the active intellect were the divine intellect, this would have no bearing on arguments for personal immortality, by Aquinas’ lights (cf. e.g. *Commentary on Aristotle’s de Anima* §677-685). I mention this only to set aside the issue of intellectual incorruptibility for the present dissertation, in which I confine myself for the most part to *de An.* III.5 and the proper function of each intellectual faculty. If Aquinas is right, and on this point I think he is, then the interpretation of the active intellect’s nature need not have any decisive consequences for the incorruptibility of the human soul.

³⁸ Cf. *de An.* I.1 402a23-403a2, II.1 *passim*, II.2 413a11-16, II.4 514a14-22.

activate?—I can easily set aside some of the more controversial aspects of the debate, side-stepping issues such as incorruptibility of the human soul and the relationship between the divine intellect and ordinary acts of human thinking. So, even if I concede that my method is otherwise on par with the method of those who have preceded me, given the intractability of the debate any viable methodological alternative is worth, at least, exploring.³⁹

Finally, the “activity-first” method I propose is preferable because of the character of the evidence in the text itself: what Aristotle says about what this intellect *is in itself* is underdetermined and can be read in multiple ways, as the passage’s varied interpretive history attests; in contrast, he describes what it *does* in slightly more detail, although still veiled in metaphorical terms. On that count, it is true that even the two main pieces of evidence for answering this functional question are difficult because they are metaphorical, which has also contributed to the diversity of interpretations. Nevertheless, the analogies with craft and with light are more determinate and more accessible to us than the abstract descriptions of the active intellect’s character (e.g. “separable,” “impassible,” “unmixed,” “essentially an/in activity⁴⁰”) that Aristotle also gives. These analogies are principally directed at explaining the active intellect’s productive activity (ποιεῖν) and its correlative patient (παθητικόν), rather than describing it in separation, as it were, from this distinctive activity.

Accordingly, I begin this dissertation with, and frame this chapter by, focusing on a reading of these functional descriptions to help understand the distinctive role of the active intellect. My aim is for this interpretation to constrain how we should understand the more abstract descriptions of the active intellect. The present chapter will achieve a provisional and abstract description of the active intellect’s distinctive activity and of its correlative patient. The view that I develop stands in opposition to an interpretive consensus that has arisen in recent years, so that already the abstract account helps to move the debate forward. This abstract description, however, while it is true to the discussion in *de Anima* III.5 and helps drive the interpretive debate forward, nevertheless leaves us

³⁹ After all, we might think that Aristotle himself is ambivalent about these two approaches, whether to begin with a “top down” and general account of a thing’s nature or with a “bottom up” account from a thing’s objects and distinctive function. See, again, *de An.* I.1 402a23-3a2, especially in view of the dual method he employs in *de An.* II.1-2.

⁴⁰ Different manuscripts put ἐνέργεια in the nominative or dative case at 430a18. Although I prefer reading it in the dative for other reasons, with manuscripts ELCX (following Ross’ abbreviations) along with Philoponus, I do not think the argument of the present chapter turns on this minor detail: either meaning is consistent with the account I wish to give here, whether it is essentially *an* activity like light, or essentially *in* activity like light. I return to this question in the final chapter.

with further questions. The balance of the dissertation gives a more complete account of the active intellect's activity, more concrete than the abstract specification achieved in the present chapter.

2.1 EXAMINING CONTEMPORARY VIEWS

2.1.1 The Text of *de Anima* III.5

But first I must begin with a translation and summary exposition of *de Anima* III.5 in its entirety—speaking as uncontroversially as possible—before focusing in particular on what I am calling the Contemporary Consensus and how to understand the Analogy with Light.⁴¹

[a] And since, just as in the whole of nature there is, on the one hand, some matter for each class [of thing] (and this is that which is capable of being all those things), [b] and there is, on the other hand, something else that is the cause and active principle in virtue of its making all things, [c] such as the art holds with respect to the matter: [d] it is necessary also that these distinctions exist in the soul. [e] So, on the one hand there is such an intellect in virtue of its becoming all things and, on the other hand, there is an intellect in virtue of its making all things, [f] as a certain state like light; for indeed the light in some way makes colors existing potentially to be colors in activity. [g] And this intellect is separable and impassible and unmixed, since in essence it is in activity. [h] For the agent is always more honorable than the patient and the principle is more honorable than the matter. [i] Knowledge in activity is the same as the thing; potential knowledge is temporally prior in the individual case, but in general it is not prior in time; [j] but [this intellect] does not at one time think and at another time not think. [k] And having been separated, this alone is the very thing that it is, and this alone is immortal and eternal [l] (but we do

⁴¹ My exposition of III.5 here must be cursory; I cannot address all interpretive issues that the text raises, even in this dissertation taken as a whole. Once I have arrived at a fleshed-out interpretation of the bits which are my focus, I shall flag places where interpretive options remain on other details.

not remember because while this is impassible, the passive intellect is perishable, and without this it thinks nothing).⁴²

In **[a]** and **[b]** Aristotle introduces a distinction that holds in the whole of nature between matter and a causal or active principle (ποιητικόν). These are familiar Aristotelian categories illustrated by a familiar Aristotelian example in **[c]**, the relationship between a craft and its matter. In **[d]** he applies this generic point to the present case by saying that these distinctions must obtain also in the soul, presumably in the human or intellectual soul. Although the text does lean in this direction on first reading, upon reflection it is also possible that the point is being made between different types of souls rather than between different powers or parts of the human soul, and so this remains an important interpretive question. Aristotle sums up this point as applied to *nous* in **[e]**, which is a stronger claim than **[d]**, since now not only is Aristotle positing active and passive principles in the neighborhood of intellectual activity, “in the soul” in a general way, but now more specifically that this distinction should obtain between two different *intellects*. He then gives another less familiar Aristotelian example in **[f]**, as light in a way makes potential colors to be colors in activity. So goes the first part of III.5 as I have divided things, which is principally concerned with establishing the distinction between these two intellects and specifying, albeit in analogical terms, the distinctive activity of the active or productive intellect as it relates to the intellect which becomes all things. Importantly, as we shall see, specifying the nature and function of this matter-like intellect is as much an interpretive question as determining the nature and function of the active intellect.

Things become even less straightforward in what I am calling the second half of the chapter. In **[g]** Aristotle gives a familiar list of descriptions of this intellect, with the addition of its essential activity (τῆ οὐσία ὧν ἐνεργεία); only this last description was not also said of the intellect described

⁴² *De An.* III.5 430a10-25 (complete chapter): Ἐπεὶ δ' ὡς περ ἐν ἀπάσῃ τῇ φύσει ἐστὶ τι τὸ μὲν ὕλην ἐκάστω γένει (τοῦτο δὲ ὁ πάντα δυνάμει ἐκεῖνα), ἕτερον δὲ τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἢ τέχνη πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς· καὶ ἔστιν ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· γίνεσθαι, ὁ δὲ τῷ πάντα ποιεῖν, ὡς ἕξις τις, οἷον τὸ φῶς· τρόπον γὰρ τινα καὶ τὸ φῶς ποιεῖ τὰ δυνάμει ὄντα χρώματα ἐνεργεία χρώματα. καὶ οὗτος ὁ νοῦς χωριστὸς καὶ ἀπαθὴς καὶ ἀμιγής, τῆ οὐσία ὧν ἐνεργεία· ἀεὶ γὰρ τιμιώτερον τὸ ποιοῦν τοῦ πάσχοντος καὶ ἢ ἀρχὴ τῆς ὕλης. τὸ δ' αὐτὸ ἐστὶν ἢ κατ' ἐνεργείαν ἐπιστήμη τῷ πράγματι· ἢ δὲ κατὰ δύνάμιν χρόνῳ προτέρα ἐν τῷ ἐνί, ὅλως δὲ οὐδὲ χρόνῳ, ἀλλ' οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ. χωρισθεὶς δ' ἐστὶ μόνον τοῦθ' ὅπερ ἐστὶ, καὶ τοῦτο μόνον ἀθάνατον καὶ αἰδῖον· οὐ μνημονεύομεν δέ, ὅτι τοῦτο μὲν ἀπαθές, ὁ δὲ παθητικὸς νοῦς φθαρτός, καὶ ἄνευ τούτου οὐθὲν νοεῖ.

previously in III.4.⁴³ In [h] he makes a familiar claim about the priority of form over matter and agent over patient, perhaps recalling the same distinction as earlier in the chapter. In [i] however, we may get something of a shift: is Aristotle speaking here of knowledge in activity or of the active intellect?⁴⁴ That is to say, is this “knowledge in activity” or “knowledge insofar as it is active” (ἡ κατ' ἐνέργειαν ἐπιστήμη) something distinct from the *poietikos nous* that is essentially an activity (τῆ οὐσία ὧν ἐνεργεία) mentioned in the preceding lines?⁴⁵ In [j] we also find things open to interpretation: Aristotle says that something does not at one time think and at another time not think, but what is the subject of “think” here (νοεῖ)? A plausible answer is the active or productive intellect, the *poietikos nous* introduced in this chapter. Are there other plausible alternatives for the subject of this verb, other plausibly non-intermittently thinking things? If not, how might our interpretation of [j] constrain our interpretation of [i], which left open the possibility that Aristotle might be speaking of something other than the *poietikos nous*?

The chapter draws to a close in [k] and [l] where Aristotle contrasts an immortal and eternal intellect with an intellect that is said to be “passive” and “perishable” (ὁ δὲ παθητικὸς νοῦς φθαρτός). There are fine-grained questions of grammatical interpretation in these lines: to what does “this” refer in [k]? Perhaps even more puzzling are the final words of the chapter in [l]: “without this [it] thinks nothing.” Commentators have outlined roughly four readings of this final line:⁴⁶ (a) “without the active intellect, the passive intellect thinks nothing” (b) “without the active intellect, nothing thinks” (c) “without the passive intellect, the active intellect thinks nothing” and (d) “without the passive intellect, nothing thinks.” The antecedent of “this” is up for interpretation,

⁴³ Aristotle calls the receptive or potential intellect of *de An.* III.4 “impassible” or “impassive” (ἀπαθές) at 429a15, “unmixed” (ἀμυγῆ) at 429a18, and “separable” (χωριστός) at 429b5. That intellect, however, is merely potentially (δυνάμει) or capable of being (δυνατός) its objects at 429a21, so that the *nous* with which we think “is nothing of the existing things before it thinks” (οὐθέν ἐστιν ἐνεργεία τῶν ὄντων πρὶν νοεῖν) at 429a24.

⁴⁴ This line is repeated at the opening of *de An.* III.7, and so some have speculated that it does not belong here.

⁴⁵ It is, of course, a mistake to confuse activity (ἐνέργεια) with active or agent principles (ποιητικόν) and acting (ποιεῖν), since on Aristotle’s view there is such a thing as a passive power (παθητικόν) being in activity (ἐνεργεία) when it is being acted upon (πάσχειν). The confusion here is a result of the English language; the point is clearly distinguished in Greek. So while the inference may not be recommended in general, here the link between active intellect and knowledge in activity is achieved by active intellect’s *essential activity* (ἐνεργεία), not its being active as an agent (ποιητικόν).

⁴⁶ See for example Ross *Aristotle*, 6th ed. (1995) 156.

differentiating (a) and (b) from (c) and (d). And whether “nothing” is the subject or object of “thinks” is similarly open to interpretation, differentiating (a) and (c) from (b) and (d).

But even setting these detailed grammatical questions aside, careful readers finish this chapter wondering precisely how many intellectual *relata* are on scene and how precisely they are related. While things appear to be clearly defined and distinguished in the first half of the chapter, despite the dominance of analogical and metaphorical language there, matters become noticeably more obscure in the second half. This is not to say that everything is crystal clear in the first part, but rather that the distinctions being drawn there are themselves clear, at any rate, even if their precise application to Aristotle’s account of intellect leaves matters open to several different interpretations. But by the end of the chapter, in contrast, pronouns have no clear antecedents and verbs have no unambiguous subjects (or objects, for that matter), making the interpretive task even harder still. Against the background of these many uncertainties about the details, then, we finish the chapter asking a very broad question: which intellects are being contrasted here and how precisely are they related to one another?

2.1.2 A Brief Survey of Views

Before turning to my own activity-first analysis of the chapter, I find it helpful to summarize some of the dominant views that have come before. The goal of these sections, however, is not principally to enumerate the many divergent readings of the chapter, but rather to draw attention to a crucial similarity shared by most recent interpretations despite their many more specific differences. Indeed, it has become typical to organize the taxonomy of interpretations according to what each takes the active intellect to be or to be like. But just as my own method is to begin with questions about the active intellect’s activity and its correlative patient, so too my taxonomical method with respect to organizing other views will be informed by these questions. My aim in this section is to survey views as they are typically organized.⁴⁷ In the following section, I shall take a closer look at many of the recent views, showing that, however else they may differ, recent interpreters agree on a logical feature of the chapter, in particular regarding relations between active and passive principles. By approaching the taxonomy of views in this alternative way in the following sections, we shall discover a surprising result: about a crucial feature of the passage, recent interpreters agree more

⁴⁷ Cf. e.g. the discussion in Shields (2016a) 312-5 for a taxonomy of exactly this shape.

with each other than with the ancient and medieval interpretations with which some of them identify.

But I begin in this section with a brief summary of recent views according to how they are most typically organized, namely according to what they take the active intellect to *be*. The first and perhaps most prominent view is that the active intellect is Aristotle's god. The descriptions certainly suggest this: "separable, impassible, unmixed, being essentially in activity."⁴⁸ Indeed, one could list the many descriptions of the active intellect from III.5 and find similar language being said of the god elsewhere in the *corpus*, giving this interpretive strategy a certain advantage, perhaps exhibiting the coherence of Aristotle's system.⁴⁹ Even the Light Analogy recalls quite vividly Socrates' sun analogy from the end of *Republic* VI.⁵⁰ The non-intermittence of this intellect's thinking, as well as its immortal and eternal character, strongly suggest that it is something divine, if not the divine substance itself. It is difficult to resist the temptation to look to *Metaphysics* Λ, *Nicomachean Ethics* X, and *Eudemian Ethics* VIII for help here, particularly when (as is often pointed out) Aristotle regularly speaks of the god at climactic moments in his most important treatises.⁵¹ Defenders of this reading trace their interpretive lineage to Alexander of Aphrodisias, who most prominently among ancient authors articulated something like this view.⁵² Important to this view is the idea that the distinction between kinds of intellect, active and passive, obtains among *types* of soul, rather than within a single human soul. Caston has called this reading "taxonomical," and it enjoys a certain degree of favor among recent interpreters.⁵³

Another view is that the distinction between active and passive intellects (as it is commonly called) obtains within the human soul in some form or another, as Aristotle's own words suggest. Different interpreters draw the distinction in different ways, although they belong to the same interpretive genus insofar as they think that both intellects or aspects of intellect belong to individual

⁴⁸ *De An.* III.5 430a17-8.

⁴⁹ Such a strategy is most thoroughly deployed by Caston (1999), although the move is not uncommon.

⁵⁰ See, for example, Sprague (1972) *passim*, Burnyeat (2008) 41-2, Johansen (2012) 243, among others.

⁵¹ Aristotle's own language in the *de Anima* may even suggest this, since he often speaks of *nous* as something divine. Cf. e.g. *de An.* I.4 408b29 and II.2 413b24-29.

⁵² Alexander's view differs in important respects from Caston's and others', as I shall discuss in the following sections.

⁵³ Cf. e.g. Burnyeat (2008) 52, n48: "The point is well argued by Caston (1999)."

human beings. Polansky, for example, takes the active intellect to be the same as the state of knowledge, since Aristotle calls it a “certain state” (ἔξις τις), and knowledge is taken to be a *hexis* elsewhere in Aristotle’s philosophy.⁵⁴ Furthermore, he argues that knowledge, once acquired, is something like an unmoved mover with respect to particular episodes of thinking, since those in possession of knowledge can contemplate the objects of that knowledge whenever they wish.⁵⁵ So on this first view, the active intellect is the persisting state of knowledge that is responsible for initiating particular episodes of thinking. According to another related view, the active intellect is the same as the intellect in activity, that is to say, the active intellect is the intellect of III.4 when engaged in the activity of contemplating some universal intelligible object, coming to be formally identical to it. On this reading, the distinction between (so-called) active and passive intellects is a distinction between intellect in potentiality and intellect in activity, a familiar distinction from Aristotle’s work more generally. Some of these readings allow that there is something special or even transcendent about the human intellect in activity, so that it joins or participates in the activity of the eternally active intellect.⁵⁶ Nevertheless, these views maintain that the distinction is here given as part of human psychology. So, on this second view of this genus, the distinction is between two states of the same human intellect, *in potentia* and *in actu*. Finally, there is a reading which understands active and passive intellect to be two aspects of a single human intellect considered as a single power.⁵⁷ This reading, too, emphasizes the role of the active intellect to initiate particular episodes of thinking, not as a settled *hexis* or state of knowledge, nor as the activity of thinking itself, but rather as that power of the intellect which moves the intellect to activity in any particular instance.

Now, I do not wish to dwell on the details of these three variations, since their specific differences are not particularly relevant to my present inquiry. What these three human-readings have in common is that the active intellect plays some role in the activation or initiation of particular episodes of thinking. This stands in contrast to god-readings that emphasize the role the active intellect plays for all rational beings in endowing the world with intelligibility in general. It is this higher-order difference that I wish to point out in my survey of the popular taxonomy: on the one hand, there are those readings according to which the active intellect is singular and transcendent,

⁵⁴ See *EN* VI.3 *passim* for a discussion of knowledge and other intellectual virtues as *hexeis*.

⁵⁵ Polansky (2007) 462-3.

⁵⁶ See e.g. Gerson (2005) 156-162.

⁵⁷ See e.g. Wedin (1988) 160-208.

and thus conclude that its function is to endow the world with intelligibility in a general way; on the other hand, there are those readings according to which the active intellect is individuated in even human soul, and thus conclude that its function is to initiate particular episodes of thinking for individual human beings, with other more specific variations on the role thus understood.

Before proceeding, I should note a very different human-reading that has fallen out of favor in recent decades, though it is not entirely without contemporary advocates. Modern-day followers of Thomas Aquinas take the active intellect to be something abstractive, being that intellectual power by which intellectual forms are abstracted from perceptual particulars.⁵⁸ This view stands in contrast to the two general camps I have outlined above, since the active intellect in this case is responsible for an activity that stands between the two activities posited by those interpretive *genera*. Rather than being responsible for general intelligibility of the world or for the activation of particular episodes, these broadly Thomistic readings argue that the active intellect is responsible for what we might call *particular intelligibility*, that particular objects are intellectually available for particular knowers. I shall return to this reading at key moments later on in this dissertation: it is quite close to the view that I shall defend. According to usual ways of organizing views about the active intellect, this is considered a human-reading, but given my analysis his view differs from the rest. For the present survey, however, I note it in order to set it aside because of its paucity of defenders in recent years, at least as a matter of interpreting Aristotle.⁵⁹

⁵⁸ See e.g. Sacra Studium Congregatio (1914): “Immaterialitatem necessario sequitur intellectualitas, et ita quidem ut secundum gradus elongationis a materia, sint quoque gradus intellectualitatis. Adaequatum intellectionis obiectum est communiter ipsum ens; proprium vero intellectus humani in praesenti statu unionis, quidditatibus abstractis a conditionibus materialibus continetur,” and “Cognitionem ergo accipimus a rebus sensibilibus. Cum autem sensibile non sit intelligibile in actu, praeter intellectum formaliter intelligentem, admittenda est in anima **virtus activa, quae species intelligibiles a phantasmatis abstrahat**” (my emphasis).

⁵⁹ For example, while Cory (2015) explains and defends Aquinas’ account of intellectual abstraction, she has said to me in personal conversation that she thought the view was surely not Aristotle’s. I have had many similar conversations with those working on Thomas expressing skepticism that the view could be found in Aristotle himself. The dominant thought seems to be that Aristotle’s active intellect is the divine intellect, and Thomas changes Aristotle’s view. Thomas, of course, understands himself to be straightforwardly explicating Aristotelian philosophical psychology, on this point at any rate.

2.1.3 The Contemporary Consensus in Focus

Now I propose to set aside that taxonomy and focus on a similarity shared by most every recent interpretation. This similarity comes into view when we shift our focus from asking “what is the active intellect?” to “what does the active intellect activate?” Accordingly, both my review of positions here and the argument I shall develop are organized around the question, “what is it that the active intellect acts *on*?”

On both sides of this contemporary interpretive divide between god-readings and human-readings of the nature of the active intellect, it has become common to speak of the “active and passive intellects” that are distinguished in III.5. Whatever their differences, most recent interpreters begin with this basic interpretive frame, speaking of two intellects that are here being distinguished. And this seems to be a reasonable starting point. After all, as I have already noted, active (ποιητικόν) and passive (παθητικόν) principles are correlatives in Aristotle’s system. Here at the beginning of III.5, one intellect is said to be active or productive while at the end of III.5 another intellect is said to be passive and perishable (παθητικὸς νοῦς φθαρτός), so that Aristotle is here making use of both adjectives (or their verbal cousins). It is entirely reasonable, then, and not in itself problematic to frame the discussion of III.5 between these two intellects and according to this broader theoretical apparatus of active and passive principles. Indeed, I myself share this general approach, focusing on active and passive intellectual principles and their joint activity.

Recent interpreters, however, take this analysis in a particular direction, notwithstanding their otherwise divergent readings. After all, on first glance at any rate, it is reasonable to suppose that this passive intellect is the very same as the matter-like intellect mentioned a few lines above at the beginning of III.5, the intellect which is there said to become all things (τῷ πάντα γίνεσθαι). And by extension, it is not unreasonable, again on first glance, to suppose that this “passive intellect” is the intellect that was described in the previous chapter (*de Anima* III.4): an intellect which becomes intelligible objects in a way analogous to the way our perceptual powers come to be informed by and, in a way, even identical to their correlative perceptible objects. So, when contemporary interpreters frame their discussion of this passage in terms of “active and passive intellects,” they also assume without much argument that the passive intellect is the very same as the receptive intellect previously discussed in III.4. Such an identification of these two intellects—the passive intellect of III.5 and the receptive or potential intellect of III.4—is what I am calling the Contemporary Consensus. I shall first show that this view is very common, indeed that it is shared

by recent interpreters who otherwise disagree with respect to the active intellect's nature and distinctive function. Then I shall turn to some reasons why people have found such an approach inviting.

I begin by quoting Rodier in 1900 who writes:

Faut-il donc admettre que l'intellect en puissance ou *pathétique* est lui aussi χωριστός, ἀμιγής, et ἀπαθής? La question doit croyons-nous, être résolue par l'affirmative. [...] En tant que pure aptitude, l'intellect passif est, sans doute, séparé de toute matière.⁶⁰

Here he recognizes that these three attributes should be said of the potential or pathetic intellect. He calls the same intellect “en puissance,” “passif,” and “*pathétique*,” italicized as an exact transliteration of the Greek passive (παθητικὸς). He also concludes that the passive intellect is distinct from imagination and the bodily cognitive faculties which it nevertheless requires for its operation:

Bien qu'il soit séparé en un sens en tant que pure aptitude l'intellect passif ne peut passer à l'acte sans le concours de l'imagination et, par suite, de l'organisme corporel [cites *de An.* III.7 on the necessity of a phantasm]. C'est donc à la passivité de l'intellect et à la matière que notre pensée doit son individualité [cites *Meta.* Λ.3 on nothing standing in the way of *nous* as a form surviving the corruption of the composite].⁶¹

He is therefore committed to the idea that the passive and potential intellects are the same, and he seeks a way to explain why Aristotle would call this intellect “perishable” at the end of III.5.

Hicks also writes in his 1907 commentary: “The intellect which can suffer [i.e. ὁ παθητικὸς νοῦς], which becomes all objects, is not immortal and eternal, but perishable [...] it was *ho dynamei nous* with which A. started in c. 4.”⁶² Here, not only does Hicks match the receptive or potential intellect which becomes all things to the passive and perishable intellect at the end of III.5, but he straightforwardly equates this *nous* with the one called “potential” in III.4. Earlier in his analysis he assumes a similar identification:

⁶⁰ Rodier (1900) 461.

⁶¹ Ibid. 467.

⁶² Hicks (1907) 508.

The argument [concluding at line 13] does not [need to] prove the existence of a passive intellect. We already know that there is a potential or receptive intellect, a capacity of being affected by intelligibles and becoming thus actualised.⁶³

And further, he assumes that “the word *τοιούτος* is predicate and stands for both “passive” with *ὁ μὲν* and “active” with *ὁ δὲ*.”⁶⁴ Hicks’ analysis is otherwise directed at a search for something which actualizes receptive *nous*, and he is inclined toward a more traditional abstractive reading, despite his commitment to the Contemporary Consensus. He begins his commentary on the chapter indicating that he wishes to avoid “committing myself to any positive view as to the nature of the distinction” (sc. between active and passive intellects), and yet he suggests that the distinction should obtain not among types of souls, but rather within the dianoetic or intellective soul itself.⁶⁵ This remark, in addition to remarks favoring an abstraction-reading, put him firmly in the camp of human-readings.

Ross too settles in the direction of a human-reading, writing:

The phrase *νοῦς ποιητικός* has often been supposed to mean the divine reason. But that interpretation is clearly ruled out by the statement that both forms of reason exist in the soul (l. 13), which can only mean the human soul. [...] The *νοῦς ποιητικός* is said (ll. 14-15) to exist by making all things, and the *νοῦς παθητικός* by becoming all things.⁶⁶

To illustrate what it means to “become all things,” Ross immediately quotes three bits from III.4, therefore identifying passive intellect with the matter-like intellect which becomes all things at the start of III.5 and the receptive intellect from III.4. Ross also says, in another work, that “The act of apprehension is ascribed, then, to passive reason.”⁶⁷ Given that the intellect of III.4 is taken to be

⁶³ Ibid. 500.

⁶⁴ Ibid. Hicks contends that this adjective is predicative, roughly translating: “the one intellect is passive, like matter, in that it becomes all objects, the other intellect is active, like the efficient cause, in that it makes all objects.” While I disagree and instead take the *τοιούτος* to be attributive and the verb to be existential, I do not conclude with Hicks’ opponents that these are merely two aspects or modes of the same intellect, akin to the usual way of taking the distinction between theoretical and practical intellect. So I part ways with Hicks’ philological analysis, but I agree with his criticism of the two-aspect interpretation. The point of the several quotes is Hicks’ easy substitution of “passive” for “receptive or potential,” committing him to the Contemporary Consensus.

⁶⁵ Hicks (1907) 498, cf. 500: “The word *ψυχῆ* here would be more precisely *τῆ διανοητικῆ ψυχῆ*.”

⁶⁶ Ross (1961) 45. He echoes similar thoughts in *Aristotle* (1995) 153.

⁶⁷ Ross (1995) 153.

the intellect which apprehends, this latter quote is also a back reference to the receptive intellect of III.4. So Ross, while more firmly a defender of the human-reading than Hicks, is just as much committed to the Contemporary Consensus.

Rist follows Ross in taking the *en tē psychē* to be evidence in favor of the human reading. He, too, is committed to the Contemporary Consensus, saying:

In chapter four, as we have seen, the Intellect as a whole, including presumably the Passive Intellect, is held to be unmixed with the body and *apathēs* (429a15), but nevertheless the Passive Intellect, as its very name *pathētikos* shows, is receptive of the Forms of the objects (including the material objects) of its thought (429a15-16).⁶⁸

Lloyd takes a similar line, saying:

The role of the passive reason is for the most part clear. Its function is to receive the intelligible forms; in that sense it ‘becomes’ everything. It evidently belongs to the individual person, as the sense-organs do, and it is explicitly said to be perishable. The passive reason, in fact, is brought into line with Aristotle’s doctrine concerning the other faculties of soul which also cease to function on the death of the individual.⁶⁹

So, we have two more human-readers who are both committed to the Contemporary Consensus.

Hamlyn is less willing to speculate on the precise nature of the active intellect, indicating that Aristotle is unlike Aquinas on this point:

The distinction is made by Aristotle only in a metaphysical way; there is no indication in his words that the active intellect plays any role other than that of a metaphysical ground for the actualization of the potentialities which make up the soul.⁷⁰

While he recognizes that this is similar to (what some might call) the mere metaphysical posit “of the Prime Mover in the universe at large,”⁷¹ his analysis assumes that this power is posited as a ground of intellectual operations in the individual soul. So, his view resembles certain god-readings in attributing to it an abstract and indeterminate role, as it were, lying in the background of ordinary

⁶⁸ Rist (1966) 14.

⁶⁹ Lloyd (1968) 198-9.

⁷⁰ Hamlyn (2002) 140.

⁷¹ Ibid.

intellectual operations, but Hamlyn still regards the active intellect as part of the individual human soul. On the passive intellect, he writes:

This is a much-discussed chapter which introduces the famous or notorious distinction between the active and passive intellects [...] The intellect which was discussed in Chapter 4 was said to become all things; it is potentially what its objects are actually and becomes them, *qua* forms, in its actualization. The other intellect which is here postulated [...] must therefore be entirely actual [...].⁷²

So, although reluctant to register an opinion on the nature of the active intellect, Hamlyn nevertheless accepts the Contemporary Consensus without argument.

Lear also is more comfortable with the idea that Aristotle is pointing readers in the direction of his god in III.5, as he discusses in the final lines of his section on the topic:

There is, it would seem, only one active mind and that is Active Mind. Of course, Aristotle could fashion criteria for distinguishing ‘my active mind’ from yours and for distinguishing our active minds from Active Mind.⁷³

Although stopping short of an outright identification of active intellect with the god, Lear nevertheless moves in this direction more than the other authors we have considered in this section thus far. Like the others, however, Lear is clearly committed to the idea that the passive intellect is the very same intellect discussed in III.4. He writes:

Generations of interpreters have called this Active Mind (*nous poiētikos*) (though Aristotle himself never uses this expression) to distinguish it from Passive Mind (*nous pathētikos*). Passive Mind, it seems clear, is the mind we have already described: it is our ability to receive the intelligible forms of things.⁷⁴

He points back to his exposition of III.4 in his description of passive intellect in the quote (drawn from his section on III.5). So Lear is also committed to the Contemporary Consensus, saying that such a claim “seems clear.”

Apostle, too, advocates for a human reading that nevertheless recognizes the similarities between the active intellect and the god. Here, however, the similarity only holds when the active intellect has been separated. To wit:

⁷² Ibid.

⁷³ Lear (1988) 140.

⁷⁴ Ibid. 136.

Now the active intellect of a man while alive does not exist outside of the man; and although it exists separately from matter and has no organ, it is somehow in the man or is a part of the man while he is alive. [...] When separated from the body after death, the active intellect exists as form or as mere *actuality*, like God, and it is the only part of a man which is immortal and eternal.⁷⁵

So while rejecting the god-reading, Apostle is like Lear in emphasizing an importantly god-like feature of the active intellect. On the other side, Apostle regards the “passive intellect” as the others do, as identical with the receptive intellect from III.4. When commenting on the intellect which becomes all things, Apostle writes:

This is the intellect as potentiality, which in English is often called ‘passive intellect.’ This intellect, prior to being affected, was described in the last Section [on III.4] as (a) being unmixed with anything, (b) without affection, (c) not requiring an organ, and (d) not an *actual* thing prior to thinking.

He continues to refer to the receptive intellect as “passive intellect” throughout his commentary on III.5, committing himself to the consensus view.⁷⁶

Kahn is similar in recognizing a close connection between the active intellect and the divine intellect. Indeed, as a result of his epistemological investigation into the character and role of *nous*, he concludes that “the Agent Intellect is in no sense part of us” nor is it “a principle of which we can be directly conscious at all.”⁷⁷ He also holds that there is a “strict isomorphism, a kind of pre-established harmony, between the structure of the Agent Intellect and the formal, rational structure of the natural world.”⁷⁸ Accordingly, although he does not say explicitly that the active intellect is the same as the divine intellect, he takes the active intellect’s principal role to account for and reflect the intelligibility of the world in general. But he, more weakly than the others I admit, can be captured by the Contemporary Consensus, since he writes in another place: “By the incorporeal principle of *nous* as such I mean not only the Agent Intellect of DA 3.5, but also the passive or potential intellect insofar as it becomes identical with the *noēta* in the act of *noein*.”⁷⁹ My case is difficult, to be sure,

⁷⁵ Apostle (1981) 161-2, 165.

⁷⁶ Ibid. 157-168.

⁷⁷ Kahn (1981) 412, 413.

⁷⁸ Ibid.

⁷⁹ Kahn (2003) 367.

though not entirely implausible, since this remark comes in a footnote where Kahn discusses the incorporeality of *nous* in view of the perishability of the human body. Although he does not explicitly reference the perishability of passive intellect, it is clearly in the background, motivating Kahn to explore ways that an incorporeal principle (the potential intellect of III.4) could also be perishable (the passive intellect of III.5), which exploration is explicit in both places.

Kosman is more direct on the first count, concluding quite forcefully at the end of a careful discussion of the “maker mind” that it

is, as the intrepid half of the tradition has always understood, divine, a fact to which we should be alerted by its description, with clear echoes of *Metaphysics*, as a being ‘whose *ousia* is *energeia*.’ For just as light is (though in a special sense) most visible, and thus the source of seeing and therefore of visibility, so is the divine most thinkable and thus the source of thinking and therefore of thinkability; light is never in the dark, and God is always, as we know, busy thinking.⁸⁰

Kosman, however, is not as clearly committed to the Consensus even as Kahn is, though neither is there evidence that he rejects it. Rather, he entirely avoids discussion of the remark that “passive *nous* is perishable.” Still, he gives an indication that there are two noetic faculties under consideration: ours, which is presented in III.4 and he, on one occasion, calls “pathetic,”⁸¹ and the divine, which is discussed in III.5. So although he does not explicitly comment on the passive and perishable intellect, he nevertheless concedes that our own human intellect is going to be individuated and dependent on material existence in ways that the divine intellect will not.⁸² And although this does not count in any way against Kosman himself, it bears remarking that in the introduction to the edited volume in which Kosman’s article appears, Nussbaum writes: “Some commentators focus on Aristotle’s discussions of the status and activities of *nous*: [...] the relation between the active and

⁸⁰ Kosman (2003) 353.

⁸¹ Ibid. 355-6. He is denying that the maker mind acts on a pathetic mind wholly incapable of thinking otherwise, but insists that it (presumably the same pathetic mind) is rather an intermittent capacity of the human soul for active consciousness, for *θεωρία*. Although he denies a certain conception of the relationship between the maker mind and the pathetic mind, he does not deny the appellation outright. Given his other commitments, it is reasonable to see this as an oblique reference to the otherwise unmentioned *νοῦς παθητικός* of III.5.

⁸² Ibid. 352-8.

passive intellect (Kosman).”⁸³ So, even if Kosman was more circumspect, Nussbaum’s gloss shows how pervasive the Consensus view is.

Wilkes also remarks on these matters of noetic interpretation in her paper in the same edited volume, in which she argues against a dualist reading of Aristotle’s account of mind and soul. On the topic of *de Anima* III.5 she does admit quite directly in an “embarrassed postscript,” however, that “I wish he had never written this chapter.”⁸⁴ She follows other god-readers in taking the active intellect not to be something that is one’s own, but rather something more general and universal that makes thinking possible, suggesting a similarity with Heraclitus’ fiery soul. Throughout her discussion, however, it is implicit that she’s taking the “passive intellect” to be the intellect with which we think, the one mentioned and discussed outside of this embarrassing chapter. Thankfully, by her lights (we might imagine), this intellect is said to be perishable, and this is the one that really matters for any meaningful analysis of human intellect, since it is the one with which we think.

Similarly, Frede in his paper in the same volume clearly commits himself to the Contemporary Consensus. He first indicates his preference, “following in this a long tradition of interpreters,” for the idea that the active intellect, at any rate, is not a power or part of each human soul, but is rather the divine intellect.⁸⁵ This is good news, by his lights, because it clearly need not threaten Aristotle’s more naturalistic conception of the human soul. He goes on, here committing himself to the Contemporary Consensus, saying:

But even if we can thus set aside the active intellect, there still is the activity of the human, passive intellect to worry about. [...] So one easily comes to think that not even the passive intellect does fit the [strictly hylomorphic and anti-dualist] view of the soul outlined above. But this would be a mistake [...] this does not mean that the exercise of the intellect does not presuppose a body. It is Aristotle's view that we could not think the way we do unless, for example, we were capable of perception and could remember, and somehow process, what we perceive. Thus our ability to think presupposes a body.⁸⁶

⁸³ Nussbaum (2003) 13.

⁸⁴ Wilkes (2003) 125.

⁸⁵ M. Frede (2003) 105.

⁸⁶ Ibid. 105-6.

So it is clear that, on Frede's view, our intellect, the one with which we think and suppose, should rightly be called "passive" and "perishable" in comparison to the divine and "superhuman" active intellect. Frede articulates a similar view elsewhere.⁸⁷

Caston takes a similar line, joining those firmly committed to the idea that the active intellect is Aristotle's god. He argues that the distinction "in the soul" (ἐν τῇ ψυχῇ) could mean any number of things, given Aristotle's extensive list of the different meanings of "in" (ἐν) in *Physics* 4.3. Accordingly, he remains unconvinced by the preceding arguments in favor of human-readings.⁸⁸ He concludes in a helpfully representative passage, which I shall quote at length:

Aristotle's concern in this passage is not, therefore, with events occurring in an individual at a given moment of time, but rather with the taxonomical relations that hold between certain species of soul and their differentia. What this clause states is that intellect, when it occurs separately (χωρισθείς), constitutes a species of soul that is nothing but its essence (μόνον τουθ' ὅπερ ἐστι) and that this alone is 'immortal and eternal.' Now, given that the essence of this intellect is said a few lines earlier to be activity as such (τῇ οὐσίᾳ ὧν ἐνέργεια, 430a18), it follows that this intellect is nothing but activity – it is something that lacks all potentiality. This, of course, is also a description Aristotle applies to God, who is just intellect (*Metaph.* 12.7, 1072b26-30). The intellect that occurs separately from the other powers is thus a distinct type of soul after all, differing 'as the eternal does from the perishable.'⁸⁹

⁸⁷ Frede (1996b) 377-8, 388: "Cependant, ce qui rend la théorie aristotélicienne de la pensée humaine presque incompréhensible, c'est la thèse, avancée dans le *De Anima* III, 5, selon laquelle toute pensée humaine, tout νοεῖν, ne suppose pas un intellect seul, mais deux intellects, un intellect passif et un intellect actif ou agent. [...] En particulier, on a trouvé qu'il était difficile de déterminer l'identité et la fonction de l'intellect agent. En ce qui concerne l'intellect passif, il semble qu'il ne soit rien d'autre que la capacité humaine ordinaire de penser. [...] Ce n'est donc pas un analogue de Dieu, par exemple l'intellect ou la raison, qui règne dans l'âme, c'est Dieu lui-même qui est le principe à l'intérieur de l'âme, des opérations de l'âme, même de ses pensées. [...] C'est ainsi, à mon avis, qu'on peut comprendre le langage de *De anima* III, 5 qui semble suggérer que l'intellect agent est tellement lié à l'âme particulière qu'il ne peut pas s'agir de Dieu. Maintenant, nous pouvons comprendre comment Aristote peut dire que la différence entre intellect agent et intellect passif se trouve dans l'âme."

⁸⁸ Recall, for example, Ross' view that leans heavily on the expression "in the soul."

⁸⁹ Caston (1999) 211.

When explaining his argument earlier, Caston references the *nous pathētikos* which is our focus, “The so-called ‘agent intellect’ belongs to one type of soul and the ‘patient intellect’ to another.”⁹⁰ In view of this take on the active intellect, Caston goes on to comment on the passive and perishable intellect at the end of III.5, assuming that Aristotle “compare[s] the second intellect with the perishable human intellect.”⁹¹ So, his commitment to a god-reading of the active (or “second” intellect) leads naturally into his commitment to the Contemporary Consensus, that the passive and perishable *nous* at the end of III.5 just is the human intellect under discussion in III.4.

Charles understands the active intellect to be the ultimate organized structure of ideas, presumably an impersonal space of reasons that humans come to participate in. He writes:

The active intellect, so understood, will be the organized structure in which each of the relevant universals is active. As an intellect, it is the appropriate locus, the ‘place for such forms’ [...but] is not itself a distinct object. By analogy with light, its role is as the abiding and structured space in which distinct universals themselves are active. If this is correct, our minds (passive intellects) will function properly when they receive objects intelligibly organized in a coherent structure of this type. What the passive mind receives will be forms or kinds located in an organized and intelligible world.⁹²

This quote illustrates two things: first, that the active intellect is an intelligible structure of universal concepts shared by all human beings and perhaps located immanently in the world, rather than straightforwardly identified with the prime mover; and second, that Charles is committed to identifying “our minds” with the passive intellect. He does this throughout his treatment of intellect, committing him to the Contemporary Consensus.⁹³

Burnyeat articulates the same view with the same presuppositions. He concludes, following Charles, that the active, immortal intellect enables our thinking by being a system of concepts. He

⁹⁰ Ibid. 206. He also writes, dismissively, against those who distinguish between potential and patient (or passive) intellect: “Why on earth should Aristotle have thought there were two [sc. human] intellects? [Footnote:] Or worse, three – the agent intellect, the potential intellect and the patient intellect – as is frequently claimed in the commentary tradition” at 202, 202n6.

⁹¹ Ibid. 213.

⁹² Charles (2002) 134-5.

⁹³ Cf. *ibid.* 129-135, 261-3. See also Charles (1984) 252-4.

follows Caston by making it explicit that this is the divine intellect. He says the active intellect contributes to our mortal thinking in the following way:

Simply by existing, I would suggest, by being what it is: an eternal intellect constituted, like any other intellect, as a system of concepts. The difference is that the divine intellect is a system (better, perhaps, *the* system) of absolutely correct concepts. As such, the deity does not need to act on us from up high, but merely to illuminate the intelligible forms. [...] The Active Intellect is God.⁹⁴

Burnyeat makes explicit mention of Brentano, rejecting his rejection of this god-reading, who had called it, “prattle without all sense and reason.”⁹⁵ Immediately before this passage, before drawing his conclusions concerning the nature of the active intellect, Burnyeat comments on the final lines of III.5, saying:

‘This’ alone is immortal, so ‘we’ are not. Nor is the ‘passive intellect’, introduced earlier as the kind of intellect which exists by ‘becoming’, i.e. by coming to understand, all things. But if and when the passive intellect does come to understand a thing or two, it cannot – the final sentence announces – do so without ‘this’. Our mortal intellect needs an immortal intellect to achieve its goal of understanding.⁹⁶

As is perhaps becoming tedious to say, Burnyeat too is committed to the Contemporary Consensus.

Johansen writes that he follows Frede, Caston, and Burnyeat in his take on the active intellect, firmly placing within the camp of god-readings, although he is less explicit on the point than those he cites.⁹⁷ For our purposes, it is more important to note his take on the passive intellect:

The implication seems to be that the agent intellect acts on intelligibles so that they can act on the passive intellect. [...] The agent intellect, then, is separable as a different kind of substance from the passive intellect, a substance which is always active and survives the destruction of the passive intellect (430a24). Agent *nous* is, then, a separate substance from the mortal substance of which the passive intellect is a part.⁹⁸

⁹⁴ Burnyeat (2008) 40-2.

⁹⁵ Brentano (1977) 24, quoted by Burnyeat (2008) at 42, 54n58.

⁹⁶ Burnyeat (2008) 40.

⁹⁷ Johansen (2012) 237n34.

⁹⁸ Ibid. 238-9.

We have seen, then, how naturally the Contemporary Consensus coheres with the god-reading: if the active intellect is simply the god, then it becomes far more natural for Aristotle to call our “passive” intellect “perishable” by comparison. So, without considering alternative views, most god-readers and many others embrace the Contemporary Consensus that the passive, perishable intellect is the subject of discussion in the preceding chapter, III.4.

Barnes, though writing earlier, I save until the very last in my survey. He stands out as one who, while committing himself to the Contemporary Consensus, nevertheless notes his awareness of and his objection to those who reject this consensus. He writes in the main text:

This notorious chapter distinguishes two sorts of intellect: one is the ‘matter’ of thought (430a10) and ‘becomes all things’ (430a15); it is called the ‘passive’ intellect, *ho pathētikos nous*, and it is perishable (430a25), because it is inseparable from body.⁹⁹

So, Barnes is like the others in assuming the identity of the passive and receptive intellects; indeed, he makes this assumption at the outset of his analysis of the chapter. But unlike the others, Barnes indicates that he has at least considered the arguments of those who had rejected the Contemporary view before it had become a consensus, saying in a footnote to the above quoted line:

Here I differ from Brentano and the Thomists who identify *nous pathētikos* with *phantasia*; this seems to me inadmissible on linguistic grounds. But Brentano’s discussion of III.5 remains the best.¹⁰⁰

Barnes, then, while committed to the Contemporary Consensus, and without providing a developed argument in its favor, nevertheless indicates some grounds for disagreeing with those who rejected it. It would be helpful to know, however, what “linguistic grounds” make this view “inadmissible.”

So, we have seen in this lengthy survey how prevalent the Contemporary Consensus is, even among those who conclude very different things about the chapter. The received taxonomy is not helpful in pointing out this broad similarity. It has become an unargued assumption at the beginning of every recent treatment of the chapter that passive and perishable intellect is the human one, discussed at length in III.4.¹⁰¹ With the rising popularity of the view that the active intellect is the god in the last two decades, the Contemporary Consensus has become even more entrenched, since

⁹⁹ Barnes (1971) 12.

¹⁰⁰ Ibid.

¹⁰¹ This assumption is even more common the more introductory the text. I have focused on extended discussions of Aristotle’s account of intellect in my lengthy review.

the perishability of human reason sits much more naturally with the idea that the active intellect is a specifically different substance, rather than a(nother) divine part of the human soul. Although there are few who explicitly reject the Contemporary Consensus in recent years, there are nevertheless some in the minority, but I shall not consider their distinct views in this chapter.¹⁰² Instead, I shall now turn to the reasons which have presumably motivated people to accept the Contemporary Consensus as the default reading.

2.1.4 Evidence for the Contemporary Consensus

There are two sorts of evidence in favor of the Contemporary Consensus, both independent of one's views about the nature of the active intellect (i.e. god-reading or human-reading). The first is derived principally from the language and setup of III.5 itself. The second and perhaps more convincing argument rests on Aristotle's analogy between perception and intellection with which he begins his account of intellect in III.4. I shall treat these two pieces of evidence for the Contemporary Consensus in turn.

As I have already conceded, III.5 invites us to use Aristotle's quite general apparatus of active and passive principles in our analysis of the intellectual case, and in particular of the intellects or intellectual powers themselves that we are driven to posit. It is clear that Aristotle is using this distinction to specify what the active intellect is and does, but it is already an act of interpretation to discern against what the active intellect stands in opposition. Given that Aristotle begins this chapter by distinguishing the intellect that becomes all things from the intellect that makes all things, it is reasonable to suppose that the correlative patient of the *poiētikos nous*, which is later called the *pathētikos nous*, is the same as the intellect which becomes all things. And presumably this reasonable supposition underlies quite a bit of the commentary I have reviewed in the preceding section.

There is, therefore, an explicit opposition between the intellect that becomes all things and the intellect that makes all things in the first lines of the chapter, and although Aristotle does not use the adjective *poiētikos* in this chapter, there is nevertheless a further, though implicit, opposition between the intellect that makes or activates all things (ὁ δέ [νοῦς] τῷ πάντα ποιεῖν) and the

¹⁰² Cf. Gerson (2005) 161 and Polansky (2008) 469. Their arguments against the Consensus, so far as I can tell, are the same as those I shall go on to cite in forthcoming sections, shared by ancient and medieval thinkers; my argument against the Consensus is different from and more substantive than these earlier arguments that are held by many over the tradition but are dismissed today.

intellect that is passive or liable to be acted upon (**παθητικὸς νοῦς**). While the second of these pairs of opposition is not explicit in the text, it is nevertheless strongly suggested by Aristotle’s terminology, given the more general relation between acting and being acted upon (**ποιεῖν** and **πάσχειν**) or between active and passive (**ποιητικόν** and **παθητικόν**). It is not unreasonable, then, to suppose that Aristotle is making the same distinction among intellectual principles in both sections of the chapter, beginning and end. Accordingly, most recent interpreters conclude straightforwardly—and, as we have seen, oftentimes simply assume without any argument at all—that the intellect said to become all things (**ὁ μὲν τοιοῦτος νοῦς τῷ πάντα γίνεσθαι**) at the beginning of the chapter is the same as the intellect called passive and perishable (**παθητικὸς νοῦς φθαρτός**) at the end.

Independent from that set of evidence is the further claim that the intellect that becomes all things—the one mentioned at the beginning of III.5—is the same as the intellect described previously in III.4. The latter intellect comes to be identical to and informed by its objects like the senses come to be their respective objects.¹⁰³ Indeed, in III.4 he even likens the receptive intellect to a wax tablet on which there comes to be writing as we make use of it.¹⁰⁴ Furthermore, much of the argument in III.4 turns on the fact that intellect must have everything as an object, that it must be able to know *all things*.¹⁰⁵ Both the receptive intellect of III.4 and the matter-like intellect at the beginning of III.5, then, are said to know or become *all things*. Given these similarities, it is independently reasonable to say that the two intellects are the same.

While the immediately preceding claim that identifies the becoming intellect with the receptive intellect is a necessary part of what I am calling the Contemporary Consensus, this claim is nevertheless not distinctive to the view I am targeting: I am happy to concede this claim. It is very likely, again for independent reasons, that III.4 describes the intellect that Aristotle says “becomes all things” at the beginning of III.5. It is important to maintain, however, that this claim is a necessary part of the Contemporary Consensus, however insufficient or indistinctive, since on that view the receptive intellect of III.4 just is the passive intellect at the end of III.5. The matter-like intellect that becomes all things, taken from the beginning of III.5, serves as the link between these other two, being the middle term in an argument for the Contemporary Consensus from the transitivity of

¹⁰³ Cf. *de An.* III.4 429a13-18.

¹⁰⁴ Cf. *de An.* III.4 429b30-30a2.

¹⁰⁵ Cf. *de An.* III.4 429a18-27.

identity. The first premise identifies the passive intellect with the matter-like intellect, both mentioned in III.5. The second premise identifies the matter-like intellect of III.5 with the receptive intellect of III.4. Taken together, then, those two moves constitute a single argument for the Contemporary Consensus: so goes the first argument for the consensus view.¹⁰⁶

A second argument proceeds a little more directly, proposing that already in III.4 there is sufficient evidence to say that the receptive intellect is passive (παθητικός). In particular, *de Anima* III.4 begins with the analogy between perception and intellect. Although Aristotle goes to great lengths earlier in the treatise to emphasize how different perception is from other more ordinary cases of passion or being-acted-upon (πάσχειν), he nevertheless allows the generic description of perception as a being-acted-upon of a certain sort (πάσχειν τι), admitting of the same basic analysis.¹⁰⁷ In the perceptual case, the active principle which acts upon perceptual powers in this special sort of way is the perceptible object, so that the perceptible object and the perceptual power come to share in a single activity of perceiving and being-perceived.¹⁰⁸ Aristotle therefore begins and ends his treatment of perception with this sort of analysis, in view of acting and being acted upon, in terms of active and passive principles.

Aristotle begins his treatment of intellect in *de Anima* III.4 in a similar way. He writes: If thinking is indeed just like perceiving, then it would be either a sort of being-acted-upon by the intelligible, or something else such as that. So intellect must be impassible but receptive of the forms and potentially such as this thing but not this thing [sc. itself], and it must be similarly disposed, just as the perceptual faculty is related to perceptible objects, so too intellect is related to the intelligible objects.¹⁰⁹

He is therefore happy to speak, at least provisionally, of intellection or noetic thinking (νοεῖν) being a certain sort of being acted upon (πάσχειν τι), recalling how he previously described perception. He does leave open, however, that it might be something else of a similar sort, still leaving in place the

¹⁰⁶ I am happy to accept the second premise, but with pre-modern commentators I reject the first.

¹⁰⁷ Cf. *de An.* II.5 *passim*, but especially at 418a1-6.

¹⁰⁸ Cf. *de An.* III.2 425b26-426a26.

¹⁰⁹ *De An.* III.5 429a13-18: εἰ δὴ ἐστὶ τὸ νοεῖν ὡςπερ τὸ αἰσθάνεσθαι, ἢ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἢ τι τοιοῦτον ἕτερον. ἀπαθὲς ἄρα δεῖ εἶναι, δεκτικὸν δὲ τοῦ εἶδους καὶ δυνάμει τοιοῦτον ἀλλὰ μὴ τοῦτο, καὶ ὁμοίως ἔχειν, ὡςπερ τὸ αἰσθητικὸν πρὸς τὰ αἰσθητά, οὕτω τὸν νοῦν πρὸς τὰ νοητά.

basic analogy between intellectual and perceptual *powers* on the one hand, and between intelligible and perceptible *objects* on the other hand.

Moreover, notwithstanding his preliminary caginess regarding talk of intellectual being acted upon, and his initial openness to an alternative intellectual account, Aristotle closes the chapter by using this passive terminology once again, now in raising a puzzle for his account.¹¹⁰ The difficulty he raises is this: how can intellect be impassible (ἀπαθής) if thinking is a sort of being acted upon (πάσχειν τι)? On the one hand, his reply to the *aporia* may not be particularly relevant at this point; it is perhaps sufficient to note that, in the final analysis, he returns to the terminology of suffering and being acted upon by the intelligible object. Indeed, in raising the *aporia* he even mentions parenthetically the general relation between acting and being acted upon (ποιεῖν and πάσχειν).

On the other hand, it is possible that thinking in this passive way about *noein* is precisely what generates the *aporia* to begin with, and that the *aporia* opens up if we think that *noein* is rather something different but of a similar sort (τι τοιοῦτον ἕτερον). The solution itself leans heavily on the notions of actuality and potentiality, terms which Aristotle uses in II.5 when expanding his account of ordinary motion and change so as to explain and accommodate the special, quasi-passive character of perception. So, perhaps Aristotle is working to amend the active/passive analysis of intellect in more appropriate terms of actuality and potentiality, a finer grained analysis first developed for perception.

But while it is important to recall that the intellectual case comes with at least as many qualifications regarding the use of passive language as the perceptual case, it is perhaps even more important to appreciate several more qualifications besides.¹¹¹ To wit:

But that the impassivity of the perceptual and intellectual faculties is not alike, is clear in view of the perceptual organs and of perception. For perception, on the one hand, cannot perceive after the agency of an exceedingly perceptible object, for example it cannot perceive sound after the agency of very loud sounds, nor can it see or smell after the agency of strong colors or odors. But intellect, whenever it thinks the exceedingly intelligible, does not think more weakly the inferior things, but even

¹¹⁰ *De An.* III.4 429b22-27.

¹¹¹ For remarks on the special passivity (or perhaps better, special *impassivity*) of perception, see *de An.* II.5 *passim*.

more strongly. For while the perceptual faculty is not without body, the other is separate.¹¹²

But just as in the perceptual case, it is possible that while insisting on the *apatheia* of a psychic capacity, Aristotle nevertheless allows and indeed requires an agent/patient analysis of that capacity's activity. So, despite Aristotle's choice of words in III.4, and his insistence on the even more special *apatheia* in the case of intellect, it is not without reason that people have come to call that receptive (δεκτικός) or potential (δυνάμει) intellect of III.4 also passive (παθητικός), a term said of *nous* for the first time at the end of III.5.

2.1.5 First Objections to the Contemporary Consensus

The view that the receptive intellect of III.4 is the same as the passive intellect of III.5 is, therefore, a commitment which is shared by many otherwise differing interpretations put forward in recent years. Furthermore, there is some reason to proceed with this interpretive assumption, at least at first glance. What is interesting about this view, however, is that it seems to have been entirely absent from ancient and medieval interpretations. While it is true that the interpretation of this brief chapter has been disputed since the earliest days at the Lyceum after Aristotle's departure, on this matter, at any rate, interpreters have not often disagreed.¹¹³ And as for later examples, Averroes, Avicenna, and Aquinas all give very different readings of Aristotle's discussion of intellect, but they all agree that the passive intellect mentioned alongside the active or agent intellect cannot be the same as the receptive intellect of the previous chapter.¹¹⁴ In this they follow Theophrastus, Themistius, Philoponus, and perhaps even Alexander, as we shall see.¹¹⁵

¹¹² *De An.* III.4 429a29-b5: ὅτι δ' οὐχ ὁμοία ἡ ἀπάθεια τοῦ αἰσθητικοῦ καὶ τοῦ νοητικοῦ, φανερόν ἐπὶ τῶν αἰσθητηρίων καὶ τῆς αἰσθήσεως. ἡ μὲν γὰρ αἴσθησις οὐ δύναται αἰσθάνεσθαι ἐκ τοῦ σφόδρα αἰσθητοῦ, οἷον ψόφου ἐκ τῶν μεγάλων ψόφων, οὐδ' ἐκ τῶν ἰσχυρῶν χρωμάτων καὶ ὀσμῶν οὔτε ὄραν οὔτε ὀσμάσθαι· ἀλλ' ὁ νοῦς ὅταν τι νοήσῃ σφόδρα νοητόν, οὐχ ἦττον νοεῖ τὰ ὑποδεέστερα, ἀλλὰ καὶ μᾶλλον· τὸ μὲν γὰρ αἰσθητικὸν οὐκ ἄνευ σώματος, ὁ δὲ χωριστός.

¹¹³ See Themistius *On Aristotle's On the Soul*, tr. Robert B. Todd (1996) 133-4, one of the few sources we have for Theophrastus' own views about soul and intellect.

¹¹⁴ Averroes and Avicenna both thought the active intellect was singular and transcendent, while Aquinas posited individual active intellects in the soul of each person. Averroes also held that the receptive intellect was singular and shared by all, but Avicenna and Aquinas held that the receptive intellect was individuated in each human soul. They therefore held representatively diverse views on the matter, but all three of them held that the passive intellect was a third distinct intellect, all

The reason for this pre-modern consensus against the interpretive consensus of today is fairly simple, it seems to me: until relatively recently, it has been commonly agreed that Aristotle's receptive intellect from III.4 is imperishable and incorporeal, given the arguments in that chapter for its being separable, impassible, and unmixed. That the passive intellect is called "perishable" at the end of III.5 has counted for them as sufficient evidence that this cannot be the same intellect as the one previously discussed and said to be both separable from and unmixed with body. Indeed, in an interesting interpretive twist, some recent commentators have suggested that the remark at the end of III.5 is evidence in the other direction, that Aristotle denies the incorruptibility of the receptive intellect.¹¹⁶ It is as if many recent interpreters are unaware of their own assumption that the passive and receptive intellects are the same: not only is the Contemporary Consensus a consensus, but it has risen above question or debate, so that people are often not even aware that they are making such an assumption.

Moreover, this is perhaps ironic given that for many medieval interpreters the incorruptibility of the soul is something commonly held with similar conviction, quite independent of these more local interpretive concerns. Accordingly, much of this argument, at any rate, against the Contemporary Consensus turns on our evaluation of the strength and import of Aristotle's arguments in III.4 against the corporeality and corruptibility of receptive *nous*. As I have confessed above, and did not deny but confessed: this is not the topic of my present study. So perhaps another argument is called for to explain the pre-modern *prima facie* rejection of the Contemporary Consensus, in the face of our own contemporaries' *prima facie* acceptance of it.

And there happens to be a second promising argument that can be developed on the basis of the (im)passivity of receptive *nous*, though it is not without its own set of difficulties. In the final line of III.5 ([I] in the quote above), Aristotle not only says that the passive intellect is perishable, but also that something else is impassible (ἀπαθές). Indeed, his claim that the passive intellect is perishable is an adversative clause, so that the final parenthetical sentence of III.5 reads: "(but we do

agreeing that each human had their own individual passive intellect which was bodily and perishable. See, for example, Aquinas' *Contra Averroistas* on this point.

¹¹⁵ Alexander is a trickier case, so I do not insist as strongly that he rejected the Contemporary Consensus, but he surely did not explicitly commit himself to it, either. I shall treat of these figures in more detail at the end of this section. See Fotinis tr. (1979).

¹¹⁶ Shields (2016c) is a good representative of this point since on his view, as we have seen, if the human soul is incorruptible it would be in virtue of the *active* intellect, but not the (so-called) *passive* intellect, which he takes to be the subject-matter in III.4.

not remember because while this is impassible, the passive intellect is perishable, and without this it thinks nothing).”¹¹⁷ At this stage of the argument it is not possible to determine the interpretation of this final line, that is, which of the four interpretations outlined above should be favored. Indeed, that is the *explanandum* in a certain sense, and so a particular interpretive decision cannot be cited as evidence without begging the question. One piece of evidence can be gleaned from this line, however: the idea that something is called impassible or impassive (*ἀπαθής*) in opposition to the passive and perishable intellect.

This presents a challenge to the Contemporary Consensus because, in III.4 at any rate, any time the receptive intellect is said to be passive—or more precisely, any time the receptive intellect’s activity is said to be a being-acted-upon (*πάσχειν*)—Aristotle immediately issues a qualification that *nous* is nevertheless impassible (*ἀπαθής*). As we have seen, at most this receptive intellect is passive in the sense that its activity admits of analysis in terms of agent and patient, standing as patient to intelligible objects, while nevertheless itself being even less liable to being acted upon than the perceptual powers, which are themselves said to be impassible or impassive. To be sure, when taken out of context, simply calling an intellect “passive” might refer to the receptive intellect’s being acted upon, in a highly qualified way, by some intelligible object, while nevertheless being impassively receptive to such objects. But given the precise context of Aristotle’s claim that “the passive intellect is perishable,” in which the passive intellect is explicitly opposed to one that is *impassible*, it becomes harder to make this move. In short, while *paschein* might have been attributed to receptive *nous*, it was never said to be *pathētikos*, and, what is more, *apatheia* has certainly never been *denied* of it.

Someone defending the Contemporary Consensus might argue that Aristotle is assuming in III.5 that the active intellect is even more impassible than receptive intellect, just like receptive intellect was said to be more robustly impassible than perceptual capacities in III.4. On this view, then, there would be three grades of *apatheia*, with each lower stage being more passive than the stage higher than it. I have two worries about this approach. First, in III.4 Aristotle made these two grades of impassivity (i.e. perceptual and intellectual) quite explicit, taking several lines to draw explicit attention to a distinction between perceptual and intellectual impassivity. In contrast, on this interpretive approach Aristotle would have simply left implicit a further distinction between two grades of intellectual impassivity, one belonging to the active intellect and the other belonging to the passive intellect. On this defense of the Consensus view, the line might be glossed in the following

¹¹⁷ *De An.* III.5 430a24-5.

way: “while this active intellect is impassible in the third degree, the passive and receptive intellect is only impassible in the second degree discussed in the previous chapter, and so it is perishable.” But again, one might worry that this is quite a step to leave implicit, especially given the explicit distinction between perceptual and (receptive) intellectual impassivity in such close proximity.

Another worry one might have for this approach regards the reasons and conclusions in the discussion of intellectual *apatheia* in III.4, rather than the mere fact *that* Aristotle there makes such a distinction between perceptual and intellectual impassivity. There, in the above quoted passage, the conclusion of the argument is that perceptual powers while being impassible are nevertheless not without body, while the receptive intellect is impassible in a more robust way, and is therefore separable or separated, presumably from the body. Although I have resisted and continue to resist too thorough a discussion of the arguments in III.4, it bears mentioning at least this much: even if the active intellect is impassible to a higher degree than the receptive intellect, nevertheless Aristotle takes even the receptive intellect’s impassivity to be sufficiently robust to isolate it from bodily disruption, as loud sounds can destroy hearing. It would be quite odd, then, if the receptive intellect were sufficiently impassible not to suffer the kinds of harm the perceptual faculties are liable to suffer, but was nevertheless itself perishable. Even if there is some further distinction between active-intellectual impassivity and receptive-intellectual impassivity, given the arguments concerning the latter’s impassivity in III.4 it would be quite odd if the further difference between these two kinds of impassivity were marked by imperishability and perishability: imperishability is already associated with this purported second level, with receptive-intellectual *apatheia* on this reading. And, of course, all of this is quite a lot for Aristotle to have left implicit, particularly if another simpler interpretive strategy is available.

As I suggested earlier, these two arguments against the Contemporary Consensus—one from receptive intellect’s incorruptibility and another from its impassivity—seem to have been sufficient for ancient and medieval commentators to join in rejecting the view. I shall survey these views to illustrate how united they are against the Contemporary Consensus, despite other interpretive differences between them downstream.

Themistius argues that the passive and perishable intellect is distinct from the potential intellect which is separable from the body. In this he takes himself to be following Theophrastus (whom he quotes at length) and Aristotle himself. He argues that both of them also called the passive and perishable intellect “common,” with Aristotle, at any rate, using this term earlier in the

treatise in I.4.¹¹⁸ Themistius writes, first in his own voice regarding Aristotle’s various claims about passive and potential intellect:

He could, therefore, be saying that the common intellect is the one that is passive and perishable. Yet regarding the potential intellect at least he explicitly says that it must be impassible, separable, and receptive of the form, [...] unmixed with body, without a bodily organ [...]. So if his claims about this are not in conflict, then according to him the common and potential intellects must be distinct. While the common intellect is perishable, passive, and inseparable from and mixed with the body, the potential intellect is impassible, unmixed with body, and separable (for he says this of it explicitly).¹¹⁹

He adds to this the testimony of Theophrastus:

From all this it is clear that we are not inappropriately assuming that one intellect is passive and perishable, which they also call ‘common’ and ‘inseparable from the body’ (it is mixture with *this* that Theophrastus says causes loss of memory and confusion; and that another is like a combination from the potential and the actual intellects, which they [sc. Aristotle and Theophrastus] posit as separate from the body, imperishable, and ungenerated.¹²⁰

So it is clear that neither Themistius nor Theophrastus (as Themistius understands him) equate the potential intellect of III.4 with the passive and perishable intellect of III.5. What is more, Themistius takes it that the active intellect is part of the human soul, and he takes himself to be following Theophrastus in this, as well.

Philoponus and ‘Philoponus’ similarly reject this identification.¹²¹ Indeed, ‘Philoponus’ explicitly equates the passive intellect with the power of imagination, when commenting on the final

¹¹⁸ *De An.* I.4 408b24-29. The use of this passage is controversial, since it is not clear that Aristotle is speaking of a common *intellect* (my emphasis): καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστίν. τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τουδὶ τοῦ ἔχοντος ἐκείνο, ἧ ἐκείνο ἔχει. διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ· οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ κοινοῦ, ὃ ἀπόλωλεν· ὁ δὲ νοῦς ἴσως θειότερόν τι καὶ ἀπαθές ἐστίν.

¹¹⁹ Themistius, (1996) with my edits, 105, 21-31.

¹²⁰ Themistius (1996) with my edits, 108, 28-33.

¹²¹ I do not wish to get into disputes about authorship or attribution of these two works. So, I adopt the convention of the Cornell series of Aristotelian Commentators.

line of III.5: “when imagination is destroyed intellect can no longer act through it or through itself.” And later: “Aristotle is of the opinion that imagination is perishable, for see, he says that passive intellect is perishable.”¹²² Similarly Philoponus, when writing on Aristotle’s account of intellect in another commentary, also interprets the final lines of III.5 as answering the preceding question from III.4, namely why we are not always thinking. The two authors, while likely not the same, nevertheless toe the same line on this particular point. The author of the commentary on the *de Intellectu* writes:

Why then, he asks, do we not remember always? Because, he says, even if intellect is impassible, and because of that we ought not to forget, still the imagination is perishable—it is the imagination that he calls ‘passive intellect’ as has been said more than once. Since the imagination is perishable, and without the imagination either helping or hindering intellect does not understand, it is no wonder that we do not understand always.¹²³

So, it is clear that both commentaries attributed to Philoponus agree on this point: the perishable passive intellect is not the potential intellect of III.4, but rather the bodily power of imagination which is uncontroversially said to corrupt with the body. The authors of these two texts also follow a human-reading with respect to the nature of the active intellect.

Moreover, in a text attributed to Simplicius, the author is motivated by a desire to square Aristotle’s account with Plato’s, inviting us to “admire his harmony with Plato, and also his greater working out of details, which Plato handed down in a more general and synoptic way appropriate to his earlier time.”¹²⁴ Simplicius also posits three aspects of intellect, arguing that the passive intellect is passible and perishable until it has been elevated, made intelligible, and raised to activity by the productive intellect, rendering it a properly immaterial intellect. He writes:

The passive intellect is material and potential and precisely this, passive and imperfect intellect as a whole, so long as it is passive. And for this reason it is perishable *qua* passive. It becomes immaterial, intellect in act, and intelligible in

¹²² ‘Philoponus,’ *On Aristotle’s On the Soul 3.1-8*, tr. William Charlton (2000) with my edits, 541,20-542,6.

¹²³ Philoponus, *On Aristotle on the Intellect*, tr. William Charlton (1991) with my edits, 61,64-77.

¹²⁴ ‘Simplicius,’ *On Aristotle’s On the Soul 3.1-5*, tr. H. J. Blumenthal (2000) with my edits, 246, 18-21.

contact with what acts, perfectly immaterial and perfect intellect in its ascent to the one that is active.¹²⁵

Here there is something of an intimate connection between the passive and perishable intellect that we begin with, and the impassible and immaterial intellect that is activated by the productive or active intellect. This view differs quite a bit from those that have come before, being more open to the possibility of the active intellect's transcendence, to its resembling the divine intellect. However, even in view of these differences, Simplicius is not comfortable straightforwardly equating the two intellects, passive and receptive, but recognizes a substantial distinction between them.

Alexander is a somewhat special case, being committed, at least in some respect, to the idea that the active intellect is Aristotle's god. The *de Anima* and the *de Intellectu* attributed to him explicitly describe three distinct intellects: the material, the habitual, and the active or productive. "Material intellect" is his term for the potential or receptive intellect of III.4 which is said to be matter-like at the start of III.5; he does not take it to have a bodily organ nor to be material in the ordinary sense. This is the intellect prior to having come to know anything, while the habitual intellect is the material intellect that has come to possess knowledge. The active or productive intellect, he says, makes the material intellect to have a *habitus* of knowledge. The active intellect activates and produces actually intelligible objects for the material intellect, thereby making the material intellect to grasp those forms. He identifies this active intellect with the intellect "from the outside" and the "first cause."¹²⁶ For him both the material and habitual intellects are imperishable, making it difficult for him to identify either with the passive and perishable intellect at the end of III.5. Indeed, he does not call any intellect "passive" (παθητικός) in his discussion of intellect, explicitly denying that even the receptive intellect should be called "passive," despite the general analogy with perception.¹²⁷ Moreover, the only thing called "perishable" (φθαρτός) in this discussion is that which presents material objects to the intellect properly so-called.¹²⁸ So, Alexander explicitly rejects the Contemporary Consensus on a number of counts.

¹²⁵ Ibid. 247, 32-35.

¹²⁶ Alexander of Aphrodisias, *De Anima*, trans. Athanasios P. Fotinis (Washington: University Press of America, 1979), 88.17-91.6 and 108.22-110.16. See also *Supplement to On the Soul*, trans. R.W. Sharples (London: Bloomsbury, 2004) and *On the Soul Part 1*, trans. Victor Caston (London: Bloomsbury, 2012).

¹²⁷ Ibid. 111.6-15.

¹²⁸ Ibid. 89.21-90.11.

To further illustrate the widespread acceptance of the Contemporary Consensus, let us consider someone who is very familiar with the ancient commentary tradition. Oftentimes even these scholars do not appreciate in full measure the ancient commentators' rejection of what has become today's consensus view. In particular, it is difficult to appreciate the pre-modern claim that the passive intellect is a perceptual power (such as *phantasia*) if one is otherwise committed to the idea that the passive intellect is the same as the receptive intellect. For example, when introducing the view that passive intellect was equated by many commentators with *phantasia*, Richard Sorabji writes:

The passive intellect is identified with *phantasia* by some, even though Aristotle distinguishes *phantasia* as a perceptual faculty. Passive intellect is too passive to be real intellect, according to Proclus. But Themistius had already connected potential intellect with *phantasia* as a storehouse of imprints that can be turned into concepts. And Philoponus says that passive intellect, being the same as imagination, takes imprints from perceptible objects and possesses them *within itself*.¹²⁹

Sorabji here clearly assumes the Contemporary Consensus in his interpretation of the very passages from the ancient commentators that express disagreement with that modern interpretive assumption. Passive intellect, for these pre-modern authors, is decidedly *not* the same as the potential or receptive intellect in III.4, and so they are quite happy to concede that passive intellect is, strictly speaking, a perceptual faculty, called “intellect” perhaps in virtue of its participation in intellectual faculties properly so-called.¹³⁰ Sorabji's implicit argument “even though Aristotle distinguishes *phantasia* as a perceptual faculty” therefore does not constitute an objection to their view. Furthermore, against his gloss, Themistius does not connect *potential* intellect with *phantasia* in the passages Sorabji references, but rather *passive* intellect: in his interpretation of these authors, Sorabji equates the potential or receptive intellect from III.4 and the passive intellect from III.5, which is a view, as I have shown, that the ancient commentators simply do not share. So it seems that even those who are otherwise quite familiar with the ancient commentators find themselves committed to

¹²⁹ Sorabji, ed. (2005) **3(j)**, 121 (internal references to passages in his Sourcebook removed).

¹³⁰ On this point see, for example, the passage from Proclus at **3(j)(4)** immediately following Sorabji's introduction quoted above, tr. Jan Opsomer: “But in my view [Aristotle] wanted to emphasize [imagination's] intermediate position between the highest and the lowest types of *gnōsis*, and therefore he called it both ‘intellect’, because of its resemblance with the highest, and ‘passive’ because of its kinship with the lowest.”

the Contemporary Consensus and, due to their own interpretive assumptions, are led to attribute conflicting or contradictory views to those commentators who rejected these very assumptions.

And to survey three important medieval views very briefly in addition: (1) Avicenna has three intellectual moving parts: bodily imagination that prepares the individual human intellect, one immaterial receptive intellect that is also proper to each human, and another immaterial productive intellect that is transcendent. He understands passive intellect to be the bodily imagination which is perishable and which comes to have the *hexeis* of knowledge.¹³¹ (2) Averroes also has three intellects, but he considers both immaterial intellects, i.e. the receptive and the active or productive intellects, to be transcendent, singular, and external to individual humans. Accordingly, on his view, only the passive and perishable intellect is individually multiplied and proper to each human being.¹³² Finally, (3) Aquinas has three intellectual powers: the passive as a bodily and perishable cognitive power, while the possible and agent intellects are held to be properly immaterial. He differs from both Avicenna and Averroes, however, in that he takes all three to belong to each individual human being. He explicitly says that the passive intellect is the same as what he calls the “cogitative power,” the most elevated inner sense power which is a perfection and extension of the natural estimative power found in animals. While he does not follow Philoponus and others in equating this with imagination as such, he nevertheless equates it with a corporeal cognitive power which trades in images and appearances, preparing the intelligible object for intellectual consideration.¹³³ All three of these medieval authors are similarly motivated to distinguish passive intellect from potential/receptive/possible intellect insofar as the latter is explicitly said to be separable and impassible in III.4, while the former is explicitly said to be passive and perishable in III.5. How they go on to describe the nature and function of these three intellectual powers lies downstream of a basic agreement about there being (at least) three distinct intellects.

Finally, I should quote Brentano at length on this point, who found himself frustrated in view of those among his contemporaries who missed this distinction. Although belonging, we might say, to our own interpretive era, he nevertheless shares much with the preceding ancient and medieval commentary traditions. With respect to the passive intellect, he writes:

¹³¹ The receptive intellect as such does not come to possess the intellectual states in a habitual way. Cf. Brentano (2003), 315–316.

¹³² Cf. Ibid. 316–319.

¹³³ Cf. Aquinas (1994) 204–236 (no. 671–794). See also the treatise *de Unitate Intellectus contra Averroistas*.

In the third place we must ask what the expression *nous pathētikos*, and even before that, what the expression *ou mnēmoneuomen* is supposed to mean. [...] the added adjective *pathētikos* is by itself sufficient to show clearly that Aristotle here speaks of something entirely different from what he had called *nous* earlier in this chapter [III.5]. (For he had said in chapter 4 that the *receptive* intellect is *apathēs*, and had concluded from this in chapter 5 that the *active* intellect is also *apathēs*; then he had proclaimed the intellect in the sense of *intellectual part* itself to be incorruptible.) But the passage from chapter 4 lies far back, and so it could happen that commentators who did not remember it were misled by the expression *pathētikos* into contrasting this *nous* with that other *nous* that had been described as the *poiētikon* of our intellectual thoughts. In this way several of the most acute exegetes were carried so far from the correct path that they declared the receptive intellect itself to be something sensory and corruptible. Naturally, if someone once adopts this prejudice he can no longer find his way through the Aristotelian doctrine. The entire theory of knowledge, which appeared to us to be so lucid and simple, now becomes a wad of confusion impossible to disentangle. Thus this little word is responsible for a great deal. But what, in our view, is the *nous pathētikos*? It is the imagination which, as a sensory faculty according to chapter 4 does not partake in the *apatheia* of the receptive intellect.¹³⁴

¹³⁴ Brentano, tr. Rolf George (1977) with my edits, 140-1. From Brentano (1867) 206-8: “An dritter Stelle müssen wir fragen, was der Ausdruck νοῦς παθητικός, und zuvor noch, was das οὐ μνημονεύομεν bedeuten wolle. [...] das beigefügte Attribut παθητικός, ist zwar an und für sich allerdings genügend, um klar zu zeigen, dass Aristoteles jetzt von etwas ganz Anderem als allem jenem spreche, was er früher in diesem Capitel νοῦς genannt habe (den er hatte ja im vierten Capitel gesagt, der *aufnehmende* Verstand sei ἀπαθής, hatte hieraus im fünften Capitel gefolgert, auch der *wirkende* Verstand sei ἀπαθής, und hatte dann den Verstand im Sinne des *intellectiven Theiles* selbst für unvergänglich erklärt); allein die Stelle des vierten Capitels liegt doch schon etwas ferner, und so konnte es geschehen, dass Erklärer, die nicht an sie zurück dachten, gerade durch den Ausdruck παθητικός verleitet wurden, diesen νοῦς jenem νοῦς gegenüber zu stellen, der als das ποιητικόν unserer geistigen Gedanken bezeichnet worden war. Auf diese Weise also wurden mehrere der scharfsinnigsten Exegeten so weit vom rechten Wege abgeführt, dass sie den aufnehmenden Verstand selbst für etwas Sinnliches und Corruptibles erklärten, und natürlich war es dem, welchem dieses Vorurtheil einmal festand, nicht mehr möglich, sich in der Aristotelischen Lehre zurecht zu finden. Seine ganze Erkenntnistheorie, die uns so licht und einfach erschien, war nun ein Knäuel von unauflösllichem Gewirre. So Grosses hat dieses kleine Wort verschuldet. Was also ist nach

I, for my part, find Brentano’s commentary both compelling and distressing, since it seems that the view of his contemporaries has won and become the default view of our own contemporaries. It is perhaps worth revisiting this alternative pre-modern interpretation of Aristotle which, as Brentano testifies, renders the entire theory of knowledge “so licht und einfach.”

In view of Aristotle’s use of the terms “impassible” or “impassive” (ἀπαθής) and “perishable” (φθαρτός) in the final line of III.5, it is unlikely he meant for “passive intellect” (νοῦς παθητικός) to refer to the receptive intellect from the preceding chapter, III.4. While I agree with the older interpretive tradition on this point, I concede that these arguments alone may not be decisive or convincing given contemporary biases against them. Still, I take these arguments to be, while perhaps indecisive on their own, nevertheless sufficiently compelling to search for another interpretation so that we can avoid making *ad hoc* distinctions in order to render Aristotle’s account coherent. The search for further arguments and argumentative strategies against the Contemporary Consensus is at least well-motivated by these considerations, if not demanded outright.

2.1.6 A Second Version of the Contemporary Consensus

I want to pause to consider a more nuanced conception of the Contemporary Consensus which appreciates all the preceding difficulties and develops a thoughtful reply to them. This version has been most prominently defended by Michael Wedin.¹³⁵ The basic idea is this: there is no single subject under discussion in III.4. There Aristotle says quite a bit about *nous* but is not yet speaking carefully about the distinct aspects of intellect or indeed distinct intellectual powers. The purpose of III.5, on this reading, is to distinguish the active and passive principles in the intellect already described without distinction in III.4. So, the active intellect is that part of intellect which is separable, impassible, and unmixed, being essentially in activity, while the passive intellect is that part of intellect which is receptive, potential, passive and perishable. As Wedin says:

unserer Behauptung der νοῦς παθητικός? Er ist die Phantasie, welche als sinnliches Vermögen, wie das vierte Capitel lehrt, nicht an der ἀπάθεια des aufnehmenden Verstandes Theil hat.”

¹³⁵ Although providing a thorough critique of Wedin’s view, Magee (2003) seems to agree with him on this point, at 124: “[Aristotle] distinguishes the powers of the intellect as creative or active (*poiētikon*—430a12) and as potential (what becomes all things [*panta ginesthai*—430a15]) or passive (*patētikos*—430a24). Thus, it seems that Wedin is correct that the discussion of the intellect in DA 3.4 applies to the intellect as a whole.” Shields (2016a) seems also to adopt something like this view, though he is less explicit in his commentary (320-9).

There is, however, an additional point that demands comment, namely, the fact that *De Anima* III.4 has already listed [separable, unaffected, unmixed] among the mind's characteristics. This has inclined a number of commentators toward the view that both receptive and productive minds are separate, unaffected, and unmixed and that they differ on the point [...] that productive mind is, additionally, activity. Unfortunately, problems arise here. First, the view overlooks the fact that [essential activity] is given not just as another, even if distinguishing, feature of productive mind but rather as the *reason* for productive mind being separate, unaffected, and mixed [sic, should read "unmixed"]. Second, III.5 certainly appears to deny just these features of receptive mind, so how can III.4 be supposed to attribute them to it? The mind of which [separable, unaffected, unmixed] are properties, namely productive mind, is referred to by means of the indicator expression "οὗτος ὁ νοῦς" ("this mind"), and this would seem to imply that they are *not* properties of that "other" mind, namely, receptive mind or the mind that becomes all things. Finally, there is III.5's assertion that receptive mind is perishable.¹³⁶

Wedin, therefore, sees the tensions between a certain reading of III.4 and descriptions of passive intellect in III.5. Immediately following this passage and in footnotes throughout he objects to Brentano, Rodier, and Hicks who all concluded that receptive intellect—the *nous* that becomes all things—shares these three features on the basis of the discussion in III.4. And further, it is clear that he equates receptive and passive intellects, especially clear in his third and final point. But he does not equate receptive intellect with the intellect described generally in III.4. He goes on to state his positive view:

My solution would be to deny that III.4 means to address receptive mind in the first place. Here it is important to emphasize that we do not take the mind in potentiality (νοῦς δυνάμει) of 429b30-31 in III.4 to be the same as III.5's νοῦς that becomes all things. And since we do not take receptive mind to differ from ὁ παθητικὸς νοῦς, neither is the latter meant to be addressed in III.4. Rather, the "potential" mind of III.4 is simply the ordinary, intentional-level mind that happens not to be actually₂ thinking. As such, the expression "νοῦς δυνάμει" gives us a way of talking about what a subject is capable of, noetically speaking. Receptive and productive minds are

¹³⁶ Wedin (1988) 183-4.

mechanisms rung in to explain how that capability is exercised. So the subject of III.4 is simply the individual mind of the ordinary person and III.5 provides a (partial) account of how it must be organized to function the way it does.¹³⁷

So, to recall the transitivity of identity syllogism from before, whereas I deny the identification of the passive intellect with the intellect that becomes all things (what Wedin calls the “receptive mind,”), Wedin denies the identification of the receptive intellect that becomes all things with the potential intellect of III.4. Accordingly, Wedin and those who might follow him, then, are only committed to the Contemporary Consensus in a way. They do not so closely align the passive intellect with the intellect of III.4 that they fall prey to the objections of the preceding section. But, this style of reading nevertheless insists that the passive intellect is the same as the receptive intellect which becomes all things and which is analogous to the perceptual faculty.

While the argument that I develop in the balance of the chapter gains some ground against Wedin’s view, I concede that my argument is strongest against those who hold to the Contemporary Consensus in a more straightforward and simple way. Nevertheless it is, to some extent, enough that Wedin identifies the passive intellect with the receptive intellect, even if he does not see the receptive intellect as unambiguously under discussion in III.4. In view of this denial, I shall outline very briefly some reasons for rejecting Wedin’s view, reasons both for suspecting that the intellect under discussion in III.4 really is the receptive intellect that becomes all things, and for thinking that the various properties that are also said of the active intellect in III.5 are indeed said of the receptive intellect in III.4 (namely separable, impassible, unmixed).

Now, it is possible that Wedin’s solution helps to straighten out some of the apparently conflicting descriptions of intellect in the two chapters, and furthermore it is understandable why someone might find in III.5 and in the “passive intellect” references to receptive intellect in III.4. If Wedin is right, the task of III.5 is to distinguish active and passive principles in the otherwise undifferentiated discussion of *nous* in III.4. But it is still unclear where we can find the active intellect in III.4. To be sure, the same properties are mentioned in III.4 of *some* intellect that are attributed to active intellect in III.5. But note that the arguments for these properties in III.4 have to do with that intellect’s ability to know all things.

In the first place, immediately after a comparison between *nous* and perception, Aristotle concludes that it must be unmixed “since it thinks all things” (ἐπεὶ πάντα νοεῖ).¹³⁸ It is possible that

¹³⁷ Ibid. 184-5.

noein in general might refer to either receptive or productive intellectual activity, but in this context it is far more likely that the “thinks all things” should mean “thinks all things in a way analogous to perception.” So, on this count at any rate, the intellect under discussion seems to be unmixed precisely because it can *become* all things. Secondly, *nous* in III.4 is said to be impassible in a more robust way than sense perception. The discussion presupposes that the *nous* and *noein* under discussion is broadly analogous to perception, by which a receptive power comes to share the form of some object. But *nous*, unlike hearing for example, cannot be destroyed by too loud a noise or, in general, too strong of an object. This intellect is therefore said to be impassible with respect to its reception of form from its respective objects.¹³⁹ Finally, *nous* in III.4 is said to be separable as a result of the preceding discussion comparing and contrasting *nous* with sense perception.¹⁴⁰ It is quite clear, therefore, that these three properties are attributed to an intellect that is analogous to perception in virtue of its differences from perception: the presupposed analogy with sense perception fixes that he is speaking of the *receptive* intellect (pace Wedin), while the precise arguments show how this receptive intellect goes beyond perceptual faculties and differs from them.

This is the most that I will have to say in response to Wedin in particular. His view, while distinctive, will nevertheless be a secondary target in the coming section, in that I argue against the identification of the passive and receptive intellects on the merits of the argument in III.5. That he does not identify the receptive intellect with the *nous* discussed in III.4 shows an appreciation of the tension between the two chapters and it escapes the counter-arguments that have been heretofore developed. One of the advantages of my new approach is that I can capture his more sophisticated version of the Contemporary Consensus along with more straightforward adherents to the view.

2.2 AGAINST THE CONTEMPORARY CONSENSUS

2.2.1 A New Argument Against the Consensus

My interpretive approach, as I have said, will focus on the distinctive activity and correlative patient of the active intellect. One way of characterizing the present argument about the Contemporary

¹³⁸ Cf. *De An.* III.4 429a18.

¹³⁹ Cf. *De An.* III.4 429a29-b4.

¹⁴⁰ Cf. *De An.* III.4 429b5.

Consensus regards the (im)passivity of receptive *nous*. Should we expect the receptive intellect—that is, the one analogous to perceptual faculties—to be called “passive” at the end of III.5 or not, based on its more thorough treatment in III.4? I want to suggest that this is the wrong question, or at least not the *only* relevant question. After all, it might otherwise, quite generally and outside of the context of III.5, be reasonable to call the receptive intellect “passive” in some highly qualified respect. My argument will be that, in the precise context of III.5, at any rate, this appellation is not merited. Although I agree with the preliminary arguments against the Contemporary Consensus, those are, as it were, merely procedural or principled objections to the view, relying on the idea that Aristotle would never, in any context whatsoever, have called the receptive intellect of III.4 “passive” or “perishable.” My argument, in contrast, is more substantive and proceeds on the merits: I shall argue that given the functional descriptions of the active intellect in III.5—in particular the analogy with light—we ought not to conclude that the passive intellect of III.5 is the same as the receptive intellect of III.4, let alone assume this position without argument.

Accordingly, the view for which I am advocating is indebted to all of the ancient and medieval commentators whom I have cited previously, as well as to Brentano. I am not nor could I be satisfied with their arguments, however; given the ascendancy of the Contemporary Consensus, a new argument is called for. So, while I recognize my debt to these thinkers and I certainly hope they would appreciate and agree with the argument I here develop, I take it to be a novel argumentative approach in favor of a traditional interpretive claim.

My argument proceeds in several stages, ultimately arriving at an inconsistent triad. The one claim of this triad which will require the most argument concerns the Light Analogy from III.5, which I shall discuss at length in the following sections. The upshot of my argument is this: although it may be reasonable to speak in a qualified way of the intelligible object acting on receptive *nous*, thus making receptive *nous* the patient in that activity of acting and being-acted-upon between intelligible object and receptive intellect, and although this is how Aristotle recommends that we understand the activity of intellection or noetic thinking in III.4, nevertheless this is neither the activity nor the agent/patient relation that Aristotle has in view in III.5. Even if receptive intellect can be understood as the passive principle or the patient in *some* intellectual activity, it is not the relevant patient here. Accordingly, I conclude that we have independent and substantive reason both to reject the idea that the passive intellect is our “ordinary” human mind and to search for some third thing that Aristotle might be inclined to call “passive *nous*.”

2.2.2 The Two Analogies Introduced

Given my activity-first approach to the active intellect, Aristotle's two functional descriptions given in III.5 enjoy pride of place in my analysis. In the first place he gives an analogy with craft and craft-matter (and indeed with these two *relata* in nature as a whole), in which there are two principles: (i) a material principle capable of coming to be and (ii) a correlative causal principle which brings such generation or production about. This analogy invokes familiar Aristotelian categories, though it is difficult to see yet in this chapter what Aristotle's intention might be for the intellectual case. He clearly has in mind some creative or productive intellectual principle, though it is not yet clear what its mode of producing whatever it produces might be.

What is more, this opening sentence raises important questions about the relationship between this chapter and the preceding one, since it is not yet clear how the receptive intellect described in III.4 might fit into these alternatives. On the one hand, one might suppose that Aristotle here speaks of the intellect in III.4 as precisely that intellect "in virtue of its becoming all things." There is much to recommend this view, though we must not be too quick to draw this conclusion.¹⁴¹ While it may be that in some respects the intellect which becomes all things resembles the intellect in the preceding chapter, we must not immediately rule out the possibility that the intellect that makes all things was also discussed there. Nevertheless, it is fairly safe to assume that the intellect that becomes all things is the same as the receptive intellect, being analogous to the perceptual faculties, even if this receptive intellect does not exhaust the subject matter of III.4.

Furthermore, given the model proposed in III.4 we might note a possible tension in the application of these active/passive intellectual principles in the two analogies of III.5. In III.4, let us recall that the active principle in thinking seems to be the object of thought. The account of III.4 begins with this point, that thinking is a kind of being-acted-upon, similar to perception, whereby an object acts upon a receptive faculty. If that was the account, we might find the Craft Analogy at the opening of III.5 to posit a superfluous active intellectual principle. That is to say: if the intelligible object were sufficient by itself to impose form upon the receptive intellect, why suppose that there is in addition an active or productive intellect which brings this receptive intellectual activity about?

¹⁴¹ After all, as Wedin (1988) and others have suggested, it is possible that Aristotle here in III.5 is distinguishing two aspects of the noetic faculty which was previously considered in III.4 without qualification or differentiation.

The second functional description Aristotle gives of the active intellect is an analogy with light and color. A reading of this analogy suggests that the active principle in thought (νοῦς ποιητικός) principally actualizes the potentially intelligible object for the knower. This point is recognized even by some recent interpreters.¹⁴² The relevant passage from our chapter reads thus, let us recall from *de Anima* III.5:

[e] So, on the one hand there is such an intellect in virtue of its becoming all things and, on the other hand, there is an intellect in virtue of its making all things, [f] as a certain state like light; for indeed the light in some way makes colors existing potentially to be colors in activity.¹⁴³

The structure of the analogy should be clear enough. In this context, Aristotle is emphasizing how light in some way makes potential colors to be actual colors or colors in activity. Light is the active state (ἔξις ποιητική) whose activity (ἐνέργεια) serves as an analogue for the active intellect's distinctive activity. Color is the proper object of sight, the visible, made to be actually colored and actually visible by the activity of light. Without light, the relevant visual objects are only potential colors or potentially visible. So the active intellect must be a similarly active state which makes potential objects of intellect to be intelligible objects in activity. This much, I take it, should be uncontroversial.¹⁴⁴

Figure 1. The Light Analogy of *de Anima* III.5

	Sight	Intellect
Object Generally	Visibles (τὰ ὀρατά)	Intelligibles (τὰ νοητά)
Object Specifically	Colors (τὰ χρώματα)	???
Active State (ἔξις)	Light (φῶς)	Active Intellect (ὁ ποιητικὸς νοῦς)
Receptive Faculty	Faculty of Sight (ὄψις)	Potential Intellect (ὁ δυνατὸς νοῦς) Receptive Intellect (ὁ δεκτικὸς νοῦς)

¹⁴² Cf. e.g. Johansen (2012) 238.

¹⁴³ *De An.* III.5 430a14-17.

¹⁴⁴ I leave open here what it means for a color or intelligible object to be active; *that* color is made to be active is common to all views.

There are, of course, questions that immediately arise for this simple picture, and I shall address them in what follows. For now, we see that Aristotle gives two functional descriptions to the active intellect, explicating how it is an active intellectual principle, in one way like craft and in another way like light.

2.2.3 The Two Analogies in Tension

There is some tension, however, between these two analogies which are just lines apart, and it bears noting this at the outset. The Craft Analogy suggests a two-place relation, perhaps between a builder or the art of building itself and the materials, where the relevant activity is the building and coming-to-be of (e.g.) a house. The activity here is constructive and there is, in the builder, a unity between the efficient and formal causes. The terminus of this construction is some concrete product external to the builder's activity, namely the house.¹⁴⁵ In contrast, the Light Analogy does not suggest a construction but an *activation*: here Aristotle suggests a two-place relation between a patient which possesses of itself some power and an agent which is capable of actualizing this power in the patient. One might suppose that light here acts as a kind of enabler or activator for the colored object to do what is already in its nature to do *qua* colored. The coming to be in this second case, then, is not the imposition of some new form or the creation of some new product, but rather the activating of some form already possessed in the patient. Whereas in the former analogy we tend to suppose a concurrence of formal and efficient causality in the agent (e.g. the builder), we do not suppose the action of light to endow something with the color that it has: the contribution of light seems to be purely efficient, actualizing a formal agency that the colored object already possesses. In short, in the case of craft a new form is realized in the matter; in the case of light no new form is produced in the illumined object. This difference can be noted without returning to the intellectual side of either analogy.

Once we do so return, however, difficulties multiply on us. We should expect at least one of the two intellectual powers or aspects being compared in the Craft Analogy to be the receptive intellect, the intellectual analogue of the perceptual faculty. Whether strictly identical with the intellect of III.4 or parsing out one aspect of it, the receptive intellect which becomes all things seems to be that which is most comparable to the receptive perceptual faculty, such as sight. So that

¹⁴⁵ Recall, for example, the distinction from *EN* I.1 between goods that are constituted by an activity, and goods which are separable products from the activities that produce them.

when we move toward some more determinate description on the basis of the Craft Analogy, we are led to think that the intellect which makes all things makes them *in* the receptive intellectual faculty in some way analogous to how sensible objects act upon receptive perceptual faculties.

And yet, once we arrive at the Light Analogy there is no longer anything analogous to the perceptual faculty. Here, where the analogy is actually in the domain of the visual and perceptual, Aristotle describes a process which, at least in the perceptual case, lies causally upstream of episodes of vision. In this analogy, the receptive visual faculty is not mentioned; the activity of light is related simply to colors and the active intellect is said to be like light thus understood. It may be true that as a result of light's or the active intellect's activity, some object (now actual) can act upon some suitably related receptive faculty. But I take it that the absence of a receptive faculty in the case of vision should steer our interpretation of the analogy and our understanding of the active intellect's role, at least as suggested by this analogy. Perhaps the activity described here, like the activity of light, is somehow distinct from and even prior to the action of an object on a receptive faculty. If the intellectual activity in question were more properly analogous to that of an object on a receptive power, we should expect Aristotle to have crafted a wholly different analogy. But as it is, no receptive power is mentioned in describing the analogous case of light and color: unlike other discussions of vision, here potential colors occupy the passive place in the relation, rather than being the active party to some passive and receptive faculty.

There are, of course, many ways to handle this tension between these two analogies, and the reading of the Light Analogy that I have outlined is by no means fixed. But at the outset it is important to appreciate the tension between even these two functional descriptions that we do get in the very brief and very cryptic III.5. Although each analogy may, on its own, strike us as familiar and straightforward, when both are used to describe one and the same faculty of the soul, we are left with difficulties.

2.2.4 “Like Light, Which in a Way...”

Two possibilities in particular might seem attractive in resolving this tension, both giving a sort of interpretive precedence to the Craft Analogy over the Light Analogy. Both strategies seek to save the idea that the active intellect informs the receptive intellect just as craft informs matter by interpreting somewhat creatively what it means for light to act on or make colors in activity. The first strategy is to say that when light makes colors in activity, it does not make colors actually visible

but rather makes them to be actually seen.¹⁴⁶ According to this strategy, while a receptive faculty is not explicitly mentioned, it is implicit in the idea that colors are being made to be active *in the receptive faculty*. This is principally drawn from *de Anima* III.2 in which Aristotle addresses some remaining issues regarding perception before turning to his account of *phantasia* and *nous*. He writes:

The activity of the perceptible object and of perception is the same and one, but the being is not the same for them. I mean for example sound in activity and the sense of hearing in activity: for that which has the sense of hearing is not always hearing, and that which has sound is not always sounding, but whenever that which can hear is active and that which can sound sounds, at that time the active sense of hearing and active sound come to be at once, which someone might call the hearing and the sounding. If indeed motion (both action and passion) is in the thing moved, it is necessary also that active sound and active sense of hearing be in that which is capable: for the activity of the motive and productive principle comes to be in the passive principle. For this reason it is not necessary that the mover be moved. So, the activity of that which can produce sound is sound or sounding, while the activity of that which is capable of hearing is hearing or the sense of hearing: for hearing is twofold and sound is twofold. And the same account holds also in the case of other senses and sensible objects. For just as the acting and the being acted upon are in the patient and not the agent, in this way also the activity of the perceptible object and of the perceptual faculty is in the perceptual faculty. But while there are names in some cases, such as sounding and hearing, in other cases other things are without a name: for while the activity of sight is called seeing, the activity of color is without a name, [...]. And since the activity of the perceptible object and of the perceptual faculty is one, though the being is different, it is necessary that what is called sound and the sense of hearing in this way [sc. in activity] perish and are preserved at the same time.¹⁴⁷

¹⁴⁶ Cf. Frede (1996b) and Kosman (2003).

¹⁴⁷ *De An.* III.2 425b26-426a11: ἡ δὲ τοῦ αἰσθητοῦ ἐνέργεια καὶ τῆς αἰσθήσεως ἡ αὐτὴ μὲν ἐστὶ καὶ μία, τὸ δ' εἶναι οὐ τὸ αὐτὸ αὐταῖς· λέγω δ' οἷον ὁ ψόφος ὁ κατ' ἐνέργειαν καὶ ἡ ἀκοὴ ἢ κατ' ἐνέργειαν· ἔστι γὰρ ἀκοὴν ἔχοντα μὴ ἀκούειν, καὶ τὸ ἔχον ψόφον οὐκ ἀεὶ ψοφεῖ, ὅταν δ' ἐνεργῇ τὸ δυνάμενον ἀκούειν καὶ ψοφῇ τὸ δυνάμενον ψοφεῖν, τότε ἢ κατ' ἐνέργειαν ἀκοὴ ἅμα γίνεται καὶ ὁ κατ' ἐνέργειαν ψόφος, ὃν εἶπειεν ἂν τις τὸ μὲν εἶναι ἄκουσιν τὸ δὲ ψόφησιν. εἰ δὲ ἐστὶν ἡ

The upshot of this passage is that the fullest activity of the perceptible object is in the perceptual faculty, and so it follows that color in its most robust respect, though without a name, is nevertheless extensionally the same activity as the activity of seeing. That is, when color is fully active, its activity is *in* the faculty of sight, so that while different in being, the activities of visible object and visual faculty are numerically one and the same.

This may help square these two analogies in the following way. Although the Light Analogy may suggest a relation only between light and color, as we have seen, Aristotle is elsewhere committed to the idea that color's fullest and most proper activity is achieved only when being seen, when operating on and, indeed, at work *in* a sighted animal's visual faculty. Accordingly, if bringing about this activity is attributed to light, then it aligns much better with the Craft Analogy, whose activity is *in* some materials, and eventually in a house. Indeed, although sounding and hearing are Aristotle's principal examples in this psychological context, building is his principal example in the natural philosophical context where he makes the same point.¹⁴⁸ This first attempt at squaring the analogies, then, tweaks the color-term of the analogy so that we think in perhaps unintuitive yet nevertheless Aristotelian ways about active colors, drawing on his settled scientific account of active colors and active sense objects generally. A preliminary worry for this account is that a receptive power is simply not mentioned in the Light Analogy, but he only mentions the activation of the perceptual agents, namely colors. It is as if Aristotle had given an analogy of craft activating a craftsman: to be sure, the craftsman's fullest activation is when he is building a house. But whenever Aristotle wants to speak of the activity of house-building, he says so, and does not speak periphrastically about the activation of the craftsman. Perhaps if he were in the habit of speaking in this way, and if we had a similarly stretched analogy in the craft case, this interpretive approach

κίνησις (καὶ ἡ ποίησις καὶ τὸ πάθος) ἐν τῷ κινουμένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέργειαν ἐν τῷ κατὰ δύναμιν εἶναι· ἡ γὰρ τοῦ ποιητικοῦ καὶ κινητικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίνεται· διὸ οὐκ ἀνάγκη τὸ κινεῖν κινεῖσθαι· ἡ μὲν οὖν τοῦ ψοφητικοῦ ἐνέργειά ἐστι ψόφος ἢ ψόφησις, ἡ δὲ τοῦ ἀκουστικοῦ ἀκοὴ ἢ ἄκουσις· διττὸν γὰρ ἡ ἀκοή, καὶ διττὸν ὁ ψόφος· ὁ δ' αὐτὸς λόγος καὶ ἐπὶ τῶν ἄλλων αἰσθήσεων καὶ αἰσθητῶν· ὥσπερ γὰρ καὶ ἡ ποίησις καὶ ἡ πάθησις ἐν τῷ πάσχοντι ἀλλ' οὐκ ἐν τῷ ποιῶντι, οὕτω καὶ ἡ τοῦ αἰσθητοῦ ἐνέργεια καὶ ἡ τοῦ αἰσθητικοῦ ἐν τῷ αἰσθητικῷ· ἀλλ' ἐπ' ἐνίων μὲν ὠνόμασται, οἷον ἡ ψόφησις καὶ ἡ ἄκουσις, ἐπ' ἐνίων δ' ἀνώνυμον θάτερον· ὄρασις γὰρ λέγεται ἡ τῆς ὄψεως ἐνέργεια, ἡ δὲ τοῦ χρώματος ἀνώνυμος [...]. ἐπεὶ δὲ μία μὲν ἐστὶν ἐνέργεια ἡ τοῦ αἰσθητοῦ καὶ τοῦ αἰσθητικοῦ, τὸ δ' εἶναι ἕτερον, ἀνάγκη ἅμα φθεῖρεσθαι καὶ σώζεσθαι τὴν οὕτω λεγομένην ἀκοὴν καὶ ψόφον [...].

¹⁴⁸ Cf. *Phys.* III.1-3 *passim*.

would have more plausibility. But as it is, it seems unlikely that when Aristotle speaks of active colors he really means for us to understand colors that are being seen in episodes of active seeing.

The second strategy, which also gives interpretive priority to the Craft Analogy, focuses instead on how we think about the light-term of the Light Analogy. It should be noted that for Aristotle, strictly speaking, light does not actualize color but rather the transparent medium. He gives his settled view about light and vision in *de Anima* II.7, and there the details work a bit differently from what is suggested here in III.5. In short, he says there that light is something like an enabling condition for a colored object to move and inform the receptive visual faculty. Light is an active *hexis* of the medium by which the sensible object moves the sense faculty. It is the nature of colored things to act upon an actually transparent medium, and if there is no such medium or if the medium lacks this active state, then the colored object will not act. So goes *de Anima* II.7:

Every color is capable of moving the actually transparent, and this is its nature. For this very reason it is not visible without light, but the color of each and every thing is seen in light. For this reason we first must speak about light, what it is. Indeed, there is something transparent. And by “transparent” I mean that which is not visible simply and in itself, but on account of another color. [...] And light is the activity of this, of the transparent *qua* transparent.¹⁴⁹

Properly, then, light does little more than allow a sensible object that is already there to act upon the appropriate receptive faculty. Why should we think, here in the context of III.5, that the active intellect which is likened to light is anything more than an enabling condition, allowing an intelligible object that is already there to act upon the receptive intellect?

A preliminary answer, simply enough, is that Aristotle says so, in this context at any rate. I grant that nowhere in the chapter on light and vision does Aristotle say that light acts on and makes potential colors to be actual in such strong and straightforward terms; but here, in our chapter, he says that light in fact makes potential colors to be colors actually so or colors in activity. Surely we should have II.7 in mind, but we should not go on to ignore or dismiss what Aristotle says quite explicitly here. Importantly, here Aristotle says that light actualizes potential colors “in a way”

¹⁴⁹ *De An.* II.7 418a31-6, 9-10: πᾶν δὲ χρῶμα κινητικόν ἐστὶ τοῦ κατ’ ἐνέργειαν διαφανοῦς, καὶ τοῦτ’ ἐστὶν αὐτοῦ ἢ φύσις· διόπερ οὐχ ὁρατὸν ἄνευ φωτός, ἀλλὰ πᾶν τὸ ἐκάστου χρῶμα ἐν φωτὶ ὁρᾶται. διὸ περὶ φωτὸς πρῶτον λεκτέον τί ἐστὶν. ἔστι δὴ τι διαφανές. διαφανές δὲ λέγω ὃ ἔστι μὲν ὁρατόν, οὐ καθ’ αὐτὸ δὲ ὁρατὸν ὡς ἀπλῶς εἰπεῖν, ἀλλὰ δι’ ἀλλότριον χρῶμα. [...] φῶς δὲ ἐστὶν ἢ τούτου ἐνέργεια, τοῦ διαφανοῦς ἢ διαφανές.

(τρόπον τινα). It may be that “light making potential colors to be colors in activity” is an imprecise description of light. The crucial interpretive question, however, is what we conclude about this qualification “in a way.”

Two generic possibilities seem to be available. It should be uncontroversial that Aristotle is explicitly flagging that light only can be described in these terms imprecisely, that he is perhaps not entirely comfortable describing light’s activity in this way. Accordingly, both possibilities that I see maintain this basic point. Perhaps he is speaking imprecisely when he claims that “light makes colors potentially existing to be colors in activity,” and he means for us to recall the more exact conception of light from II.7; or perhaps he is speaking imprecisely about light precisely in order to describe the operation of the active intellect, and he means for us to ignore the more exact conception from II.7. In either case “in a way” flags that Aristotle is aware that his present description is strange given what he says earlier in II.7. The interpretive question is whether this loose-speech is relevant to how we ought to interpret the present analogy, whether it is meant to wheel in or rather screen off a more precise description of light found in a more remote passage.

It is hard to justify the former interpretation, that he means for us to ignore the imprecise locution here, looking instead to II.7. After all, however imprecise this description of light may be, it is nevertheless exactly the description Aristotle calls attention to here when likening the activity of the active intellect to light. Accordingly, the other interpretation can give a clear and decisive answer when asked, “Why does Aristotle give a loose account of light in this context?” It is not clear, however, what someone reaching for the scientific conception of light could say in reply. Why would Aristotle give us this imprecise description of light, only to urge us to recall and replace it with one that is more precise? I find that interpretive strategy to be a non-starter, since it cannot supply a reason for Aristotle’s present imprecision besides, perhaps, carelessness.

In contrast, according to the other interpretive strategy, Aristotle’s imprecision is *careful*. The following might explain his imprecise description of light: Sometimes X is analogous to Y only under an inexact description of Y. In these cases, an exact description of Y would, in fact, be distracting rather than helpful. So, although Aristotle may expect us to be familiar with his settled scientific view of light, we should not allow this background knowledge to distract us from the description of light he opts for here in III.5, however scientifically imprecise such a description may be. As a matter of interpretive principle, whenever interpreting analogies, we should privilege the proximate context of an analogy over more remote details concerning one of its elements: if “light actualizing potential colors” puzzles us or strikes us as unexpected, perhaps we should examine our

own expectations regarding this analogy's purpose before attributing to Aristotle careless imprecision.

Thus, I prefer the latter interpretive option since it explains everything that is to be explained in the text, in particular why Aristotle is deliberately choosing an imprecise description of light here: it is because the imprecise description serves as a better analogue for the active intellect's activity than a precise description would have. The former interpretive option, however, cannot explain this: as we have seen, according to that reading, "in a way" marks that Aristotle knows he is speaking imprecisely and means to direct us to a more precise conception, yet he leaves unexplained why he would speak imprecisely in the first place, especially when explaining one of the more obscure aspects of his psychological account. On my alternative reading, Aristotle's imprecision is *careful*; the rival view, however, must see his imprecision as *careless*. So, the settled scientific view of light from II.7 according to which light is merely the active state of a transparent medium *qua* transparent should be set aside in favor of his description here.

Furthermore, I should add that this interpretation of "in a way" also has consequences for the first strategy I considered. Not only does light *in a way* act on colors, but what it means for those colors to be active is now different from the settled account from II.7 or even III.2. After all, light is not a sufficient condition for seeing, so it cannot directly bring about acts of vision so that colors are active in a visual faculty. Light can only supply the medium and, in so doing, activate colors to be able to do what they do; light cannot supply or directly cause acts of vision. So, light only "in a way" acts on colors, making them to be *active* colors, again, only "in a way."

2.2.5 *Sicut Cervus...*

Once we understand the restricted scope of the analogy between the active intellect and light in *de Anima* III.5, we are still left to puzzle over what "making potential colors to be colors in activity" might mean as a description of light, let alone as an analogous description of the active intellect. Under this description, which Aristotle isolates for his present purpose of explaining some feature of intellect, it remains unclear what the precise contribution and function of light—and by analogy, the active intellect—might be. I propose the following image to help understand what Aristotle might be on about here, first on the light side of the analogy before carrying things back to the intellectual side.

Let us imagine the following scenario. In the first place, a deer lies sleeping in a meadow littered with wildflowers. It is dark, still early morning before the sun rises. Then, as time goes on, the sun begins to illuminate the field of grass and flowers, but our deer remains asleep. What should we say is the contribution of light, and how have the colored objects changed as the sun has risen over the field? A very plausible reply along the lines of our passage: the sun has *activated* a power or potentiality (δύναμις) of the colored objects to act, that is, the power to do the sorts of things colored objects do *qua* colored. Before the sun came up, these flowers were idle and inactive in this respect, unable to perform their characteristic activity *qua* colored, namely to act on the visual powers of sighted animals. The sunlight makes them to be colored in an actual and active sense. But let us not forget that our deer remains sleeping, and (let us stipulate) no other sighted animals are about this particular field on this particular morning.

Let us draw some preliminary conclusions about the case. It is clear, in the first place, that nothing sees or is seen before sunrise. By stipulation there is no light (perhaps a cloudy night with a new moon), no illumined flowers, and no perceptual subjects. Prior to sunrise, all interested parties are inactive. So what happens when the sun rises? It would be a mistake, on the one hand, to say that the sunlight caused the very color of the wildflowers, since in an important respect these retain their color in the darkness, in potentiality, at any rate. But, on the other hand, it would also be a mistake to say that the sunlight caused these wildflowers to be seen, since in the absence of a sighted animal whose eyes are open and whose visual faculty is active, there is no activity of seeing to be explained. The sun is therefore both unnecessary for the color that visible objects retain even in the darkness, and insufficient for the activity of seeing that visible objects can accomplish only in the presence of a sighted animal with eyes wide open. It would be better to say that the sunlight is responsible for something in between these two, perhaps that it *activates* the color which the flowers possess of themselves without thereby necessarily causing their color to be seen: the light acts on the colored objects so that the colored objects are now able to act on *their* correlative objects, namely the visual faculty of sighted animals. The light activates the agency of idle and inactive colors which retain their own agency and correlative patients. We are thus able to isolate the contribution of light on a colored object, making Aristotle's perhaps scientifically imprecise remarks from III.5 more intuitive.

Let us now develop the image still further. Our late-sleeping deer now opens his eyes: immediately he sees the wildflowers in the meadow that have already been illumined by the morning

sun. The opening of his eyes permits him to be acted upon perceptually by the illumined flowers.¹⁵⁰ But had he opened his eyes hours before, there would have been nothing for him to see: no colored objects would be able to act upon him in the appropriate way. Prior to the sunrise, no actual perceptual agents were available to achieve the present activity of seeing and being seen; on the other side, prior to his opening his eyes, no actual perceptual patients were so available. But, when illumined flower meets with open eyes, the joint activity of seeing and being seen is realized. We can therefore discern three actualizations here: the activation of the flowers *qua* visible, the activation of the eye *qua* visually receptive, and the joint activity of them both when they come into appropriate proximity.¹⁵¹

Now, suppose that things had been different: alternatively, this deer is much less sleepy and rather, with eyes gradually opening as the dark of night gives way to the light of morning, he watches the dawn illumine the flower-filled meadow. As the sun dawns gradually over the whole field, and as his eyes gradually open up, he sees with ever-increasing clarity the colors of the flowers. In this case, all three changes progress together: as the flowers are gradually illuminated before his gradually opening eyes, the activity of seeing and being seen gradually becomes more complete. Now, if this is the version of the scenario under consideration, it would be easy to miss the complexity of the case. That is, in this version, due to the presence of a sighted animal, the contribution of light illuminating the flowers is bound up with the full-blown activity of seeing and being seen. But if we consider the first case of the sleepy deer, it becomes easier to distinguish between the distinct aspects of an otherwise complex and indistinct process.¹⁵²

I need not deny that such a situation is possible; instead, I insist only that such a convergence of these several activities is not necessary. The scenario just described is a contingently complex one, in which otherwise distinct relations and changes are coincident and, coincidentally,

¹⁵⁰ The nature of even this being-acted-upon (*πάσχειν*) is, of course, non-standard, cf. *de An.* II.5.

¹⁵¹ I say “proximity” rather than “contact” because sight is a distance, not a contact, sense. I set this issue aside, though it is part of the appeal for the present argumentative purpose that sight works through an easily discernible medium. Though it is true that Aristotle often speaks of action and passion in terms of contact, nevertheless he also speaks of it in terms of proximity. Cf. *Meta.* Θ.5 1048a5-11, where as soon as non-rational agent and patient come near (*πλησιάζουσι*), the joint activity of acting and being acted upon immediately and necessarily ensues.

¹⁵² This reminds me of the argument at *Rep.* II 372e: focusing on the virtuous and best city will not provide an occasion for recognizing the complexity of the case and the distinct parts. Better, Socrates says, to explore the luxurious and indeed feverish city. Similarly, too, in the case of our sleepy deer.

liable to be confused. Rather, if light can accomplish its work in the absence of any sighted animals, as in the first case with the deer who remains asleep past dawn, then light's proper work must exclude what occasionally happens to be accomplished in the presence of sighted animals. Light makes the flowers to be actually *available* to be seen: it is rather the illumined flower, not the sunlight, which as such goes on to trigger the full-blown activity of seeing and being seen in a sighted animal. Without light, the colored object remains incapable—or better, only *potentially* capable—of doing what colored objects characteristically do; once illumined, this potential visibility has been actualized and activated, so that the colored object is now capable of acting upon the correlative perceptual patient, should one happen to walk by or wake up. The latter scenario involving our deer waking before dawn risks confusing, rather than distinguishing, the several interactions and agent/patient relations at work here. That is, when the sighted animal is present and visually receptive all along, we are more likely to confuse the action of light on a colored object with the action of a colored object on a visual subject.

So, according to my view and in accordance with the description of light Aristotle offers in *this* context for *this* explanatory purpose, we have two distinct agent/patient pairs with two distinct activities of acting and being acted upon on the visual side of the analogy. In the first place, the light acts upon the colored object raising it from *dynamis* to *energeia*, so that it comes to be active and capable of performing its characteristic activity. Indeed, such objects are already performing some significant part of their characteristic activity, insofar as they can move through the illumined medium and act upon any object that happens to come by. In this way we might rightly call them active colors or colors in activity (*ἐνεργεῖα χρώματα*), even before it is actually being seen by some animal. And yet, in the absence of any sighted animal, *qua* colored such an illumined object has not yet achieved its fullest activity. It has become an actual and indeed active agent but it still lacks its correlative patient.¹⁵³ Moreover, in the second place, a colored object having been thus illumined acts upon and informs the visual faculty of some sighted animal, when the visual faculty is actually receptive and when the two are brought into the appropriate proximity. So, according to this more

¹⁵³ On my view, these active colors as such need not already be being seen. However, as we have seen, *de An.* III.2 may suggest that the fullest activity of perceptible objects is in being perceived. I wish to block this reading by conceding some respect in which these illumined colors are not fully active if they are not presently being seen, but insisting on some other significant respect in which these illumined colors are already active.

intuitive (though perhaps not scientific) account of light and vision, we have two activities and two intertwined agent/patient pairs.

2.2.6 ...*Ita Anima Mea*

Now, perhaps this is not how Aristotle prefers to think of the case of vision. But recall that, according to the view I am here developing, he prefers to describe light in an imprecise or unscientific way precisely in order to illuminate the analogous case of intellect. Accordingly, an alternative reading of the Light Analogy is now available to us: the active intellect acts upon its correlative patient, presumably potentially intelligible objects, which is analogous to the action of the sunlight on a yet-to-be-illuminated flower or, in general, of light on unlit colors. Once they have been made to be actually intelligible, these objects go on to inform the receptive intellectual faculty—the *nous* of the preceding chapter in III.4 that is like eyesight—in a distinct activity constituted by the coming together of a further and distinct agent/patient pair. The active intellect therefore makes an object to be *available* for thinking, so that it comes to be capable of moving and informing our receptive intellectual faculty in a way analogous to how a now-illuminated flower moves and informs our receptive visual faculty. Importantly, on my reading, the focus of III.5 is the former of these two activities and the former of these two agent/patient pairs: again, light and colors are mentioned in the analogy, but not any receptive visual faculty, so that light is the agent and unlit color is the patient.

But when returning to our *explanandum*, the intellectual case, we encounter something of a difficulty: if it is true that the fullest activity of the perceptible object and the perceptual power are the same, and if we are to understand the intellectual case on a similar model as perception, then it might be thought (as we saw before) that the active intellect activates both objects and the receptive power together. Perhaps in making the intelligible objects active the agent intellect thereby also makes the intellectual power actual: actual intelligibility and actual thinking may turn out to be the same. Now perhaps there is some way of blocking this move and insisting on some non-trivial respect in which illuminated colors are active even when not presently being seen, when in the absence of sighted animals.¹⁵⁴ And so perhaps analogously there is some non-trivial respect in which activated intelligible objects are active even when not presently being thought.

¹⁵⁴ As I have argued at the end of each of the two preceding sections.

However, unlike the visual case where sighted animals can come or go and eyes can open and shut, in the intellectual case the receptive faculty is always present and (quite reasonably) always receptive. That is, in the intellectual case the receptive faculty that is analogous to the visual faculty is always beholding what is before its eyes.¹⁵⁵ Accordingly, the occasional and coincidental complication suggested by the wakeful deer *always* obtains in the intellectual case. In asking for which of the two activities the agent intellect is responsible or which of the two is the proper patient of the agent intellect—namely, the question I have been asking in this chapter—Kosman has said that for Aristotle this is a “specious question.”¹⁵⁶ As a final point in my exposition of the Light Analogy I would like to defend the idea that my question is, in fact, a good one.

I do not deny that colors and the visible, when fully actual and active, are actually being seen by some perceptual subject.¹⁵⁷ But I suspect (with Kosman, in fact) that there are more than two stages of act and potency when it comes to visibility, among many other things. Furthermore, given that Aristotle is speaking imprecisely about the contribution of light here, it is also natural that he is speaking imperfectly about active colors. If we recall the intuitive way that light might be said to act on colors, it does not follow from that intuitive conception that light is a sufficient condition for seeing; after all, the deer is able to sleep in. But I must immediately concede that as soon as intelligible objects, at any rate, are actualized they will move the receptive faculty, since its eyes are never closed. I might therefore seem to be splitting hairs when I still insist that the active intellect is principally responsible for actualizing the intelligible object.

But I take it that this speaks to the purpose of *de Anima* III.5 and its relation to III.4, as we shall see in the balance of this chapter. Perhaps we have good and independent reasons to think that intelligibles stand in need of actualization in order for them to be available to be thought, just as

¹⁵⁵ Upon writing this sentence I realize that Richard Rorty and those sympathetic with his critique of the ocular metaphor would not be pleased. I hope in the balance of this dissertation to save some important sense in which knowledge and thinking remains *speculative* and systematic, while nevertheless conceding a place for a more active, productive, and *edifying* intellectual activity. Cf. Rorty (1979) 365ff.

¹⁵⁶ Kosman (2013) 345. His analysis is very sophisticated, and the question he calls “specious” is characterized in two different ways: while I, too, object to one of his characterizations as “specious,” the second of the two specifications of the question seems entirely acceptable to me. I articulate my defense of one of these specifications in what follows.

¹⁵⁷ Again, cf. *de An.* III.2 425b26-426a26, and perhaps also *Phys.* III.1-3 *passim*.

flowers need to be illumined before they are available to be seen.¹⁵⁸ And in any case, these remain distinct conceptual and causal moments that can be distinguished even in the intellectual case, notwithstanding receptive intellect's ever-wakeful state.¹⁵⁹ Even if episodes of thinking follow this "intellectual illumination" with a temporal immediacy, it does not follow that intellectual illumination *as such* is responsible for episodes of thinking. Here I lean heavily on the distinctions made clear in the case of the sleepy deer: the same distinctions are available and, indeed, relevant in the intellectual case. So perhaps Kosman has a point that extensionally speaking there is no difference, that in the intellectual case illumination immediately gives way to reception. But it does not follow that these are therefore the same activities to be analyzed in the same way with the same correlative principles.

So on my view, then, there are two distinct activities and two distinct agent/patient pairs that are involved on both sides of the analogy between perception and intellect. In III.5 the focus is the activity of illumination whereby light activates potential colors rendering them active. In III.4. The focus is the activity of seeing-and-being-seen whereby a perceptible object acts on the perceptual faculty. So, on the intellectual side of the analogy we similarly have two distinct activities with two agent/patient pairs. There is, of course, the action of an intelligible object on the receptive intellect, as presented in III.4. But there is a prior activity in which the active intellect activates the very intelligible object, and this is the topic of discussion in III.5.

2.2.7 An Inconsistent Triad

I have so far developed an account of the active intellect's activity on the basis of the Light Analogy, asking what active *nous* activates. I have worked to establish the following claim:

(α) The active intellect acts upon potentially intelligible objects.

I have further sought to distinguish one activity in which the objects are themselves activated and another (conceptually, if not temporally) posterior activity in which those objects act on and inform a receptive faculty. I think this distinction obtains in both the perceptual and intellectual cases.

¹⁵⁸ As I shall argue, the discussion of potential *noēta* at the end of III.4 naturally precedes the discussion of an activating intellect in III.5.

¹⁵⁹ The worry, of course, will be whether this is a distinction without a difference. I shall address that concern in what follows.

Furthermore, since I have insisted on distinguishing these activities and agent/patient relations, claim (α) is closely related to another:

(α') The active intellect does not act upon the receptive intellect of III.4.

This clearly follows from the preceding discussion, in particular the last section which sought to distinguish, again at least in conceptual and ontological terms if not numerically or temporally, the light/color relation from the color/vision relation. If this is right, then we must say in the intellectual case that the active intellect's proper patient is not the receptive intellect that is analogous to sight, but rather potentially intelligible objects that are analogous to yet-to-be-illuminated colors. Recall that this view is supported by the fact that nowhere in the Light Analogy is the faculty of vision mentioned: only light and colors are terms on the vision side of the analogy, so we should neither expect nor supply vision's correlate, the receptive intellect, as a term on the intellectual side of the analogy. While the next two claims of the triad are somewhat straightforward and do not require much argument, these first claims (α) and (α') are hard-won.

In the second place, as I have noted throughout, the terms "active" and "passive" ($\pi\omicron\iota\eta\tau\iota\kappa\acute{o}\nu$ and $\pi\alpha\theta\eta\tau\iota\kappa\acute{o}\nu$) are uncontroversial correlates in Aristotle's system, as are acting and being acted upon ($\pi\omicron\iota\epsilon\acute{\iota}\nu$ and $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$). Accordingly it is entirely reasonable, when Aristotle begins the discussion of this new active intellect which makes all things, that we should ask, "What does it activate? What does it act upon? What is its correlative patient?" So, when a patient or passive *nous* is mentioned in this very context, in the final lines of III.5, we reasonably conclude that *it* is the patient we have been looking for:

(β) The active intellect acts upon the passive intellect of III.5.

And finally, in the third place, is the Contemporary Consensus which is my target:

(γ) The receptive intellect of III.4 is the same as the passive intellect of III.5.

The Contemporary Consensus, as we have seen, is simply that the passive intellect *just is* the intellect from III.4 which is analogous to our perceptual faculties, insofar as both are receptive of their respective objects, whether perceptible or intelligible.

These are clearly inconsistent, (α'), (β), and (γ): the only way the active intellect can fail to act on the receptive intellect and yet still act on the passive intellect is if these are two distinct faculties, that is, if we reject the Contemporary Consensus that identifies these two. In view of this inconsistent triad, there are four obvious ways of responding to the argument. First, one might deny (α) entirely, and by extension also (α'), supposing that the active intellect is responsible for initiating and shaping episodes of human thinking, notwithstanding the preceding arguments against this view

based upon the Light Analogy.¹⁶⁰ In the second place one might deny the inference from (α) to (α') , arguing that it is possible that these two things both constitute the active intellect's correlative patient, both potentially intelligible objects and receptive intellect.¹⁶¹ In the third place, one might deny (β) , saying perhaps that "the passive intellect" here need not refer to the proximate patient of the active intellect, which are properly speaking objects and not an intellect, but rather to the ultimate or derived patient of the active intellect, namely the receptive intellect which is acted upon by the intelligible object.¹⁶² Indeed, on my view there still remains a question of how *both* the passive intellect and the potentially intelligible objects could be patients for the active intellect, if the passive intellect is not the same as the receptive intellect, a question which I shall address in a subsequent chapter.

My preferred response to the inconsistent triad is to reject (γ) , the Contemporary Consensus. Although this strategy raises still more questions—questions which I shall answer in the balance of the dissertation—it nevertheless adequately answers the questions already on the table. "What is the active intellect's distinctive activity?" It activates potentially intelligible objects by making them available for thinking, as light makes visible objects available for seeing, which activity, on the intellectual side at any rate, is yet to be described or determined in more concrete terms. "What does the active intellect activate?" It activates passive intellect and potentially intelligible objects, which bear some important relation to each other yet to be determined. By rejecting the Contemporary Consensus, I am able to preserve a close reading of the Light Analogy (as exemplified in (α)) without confusing conceptually distinct relations or activities (as exemplified in the inference from (α) to (α')) and without sacrificing Aristotle's preferred and correlative terminology of active and passive principles (as exemplified in (β)).

So goes my argument against the Contemporary Consensus on the merits of III.5 itself, rather than resorting to arguments on the basis of the supposed incorruptibility or the sometimes qualified impassivity of receptive *nous*. It is possible for one to accept my argument and still hold that receptive intellect is both passive and perishable, as perhaps highly qualified but nevertheless appropriate descriptions in other contexts. Notwithstanding that concession and however passively

¹⁶⁰ Recall Frede (1996b) and Kosman (2003).

¹⁶¹ Recall Charles (2002).

¹⁶² Johansen (2012) seems to hold a view of this kind, among others who hold to the Contemporary Consensus but opt for a natural reading of the light analogy, accepting (α) and (α') .

we might characterize receptive intellect in other contexts, I take my argument to be strong evidence against the consensus view. Aristotle must have in mind *three* distinct intellects—receptive, active, and passive— with the precise function of (at least) the latter two yet to be determined in more specific terms.

2.3 DEVELOPING AN ALTERNATIVE PICTURE

2.3.1 An Expected Development

Several treatments of *de Anima* III.5 suggest that the chapter is an unexpected interruption in an otherwise coherent exposition of human psychological powers in the third book. On my view, however, this newly posited intellectual power plays an important role in the intellectual lives of human beings and is integral to the overall argument of these chapters, without prejudice to the idea that the active intellect could still be the divine intellect.¹⁶³ But if that is right, then we might have expected Aristotle to prepare readers for the discussion. Someone might object that according to my reading, too, this chapter's place in Aristotle's account of intellect remains obscure and unexpected. On this count I have an answer, and I believe it is an answer which gives some independent evidence in favor of my view against the alternatives already considered in this chapter. In general, we should prefer a reading of III.5 that fits well with the surrounding chapters.

In the first place, although god-readers are quite right that Aristotle will mention the divine as either first mover or first intelligible at key moments in other treatises,¹⁶⁴ in those contexts Aristotle is much more explicit about any heavenward ascent or heavenly appeal. Here, in contrast, readers are unprepared for any mention of the divine intellect, especially if this intellect's activity is simply to guarantee the intelligibility of the world in general. Nor are his remarks about incorruptibility and separability sufficient to make this case, since earlier in *de Anima* I.4 and II.2 Aristotle suggests that intellect *as a faculty of the human soul* may share these "rather divine" characteristics. Since the god is not even mentioned in III.4-5, it is difficult at best to read III.5 as

¹⁶³ If the active intellect is the divine intellect, its role cannot be the same as that posited by god-readers of recent years: it cannot merely be responsible for the general intelligibility of the world, but must play some role in rendering particular objects actually intelligible for particular knowers. More to come.

¹⁶⁴ Cf. e.g. Caston (1999) and Burnyeat (2008), referencing *Meta.* Λ, *Phys.* VIII, *EN* X and *EE* VIII.

about the divine intellect unconnected with some role in human intellectual activity. Furthermore, it is not clear why Aristotle would need to establish the general intelligibility of the world in a psychological treatise: such a claim seems far more appropriate to another context, and something he could rightly take for granted here. I take it that god-readings, especially those that only attribute this abstract metaphysical role to the active intellect, are not preferable for these reasons.

Secondly, although the idea that III.5 distinguishes two aspects of a single intellect already described in III.4 has some initial plausibility, Aristotle does not prepare readers for such a distinction or for the receptive intellect to require further clarification.¹⁶⁵ On that interpretation Aristotle is making explicit in III.5 a complexity in the intellect already described in III.4: unlike other distinctions Aristotle draws, such a distinction would raise more questions than it solves. As I have noted, the intellect of III.4 seems to be adequately described as the intellect that becomes all things in a way analogous to perception, without any active or productive remainder. And furthermore, the three allegedly problematic descriptions Wedin considers in his defense of this interpretation—separable, impassible, unmixed—all seem to involve the *nous* that is analogous to perception insofar as it is receptive of all things, as we have seen. Although there may be some initial plausibility to those interpretations given evidence internal to the chapter and, moreover, some motivation for them given the apparent tensions between III.4 and III.5 on receptive intellect's impassivity, this strategy also struggles to explain how the chapters in III form a coherent whole.

Other interpretations have more plausible answers to this question about how III.5 fits in. On these views, it is common to draw on the several questions Aristotle raises at the end of III.4 in order explain III.5's place in the dialectic. I quote this last paragraph of III.4 at length:

[a] But someone might raise a puzzle: if intellect is simple and impassible and has nothing in common in any respect, just as Anaxagoras says, how will it think, if thinking is a kind of being-acted-upon (for it seems acting and being acted upon obtains in virtue of something common between them); [b] and further someone might raise a puzzle whether intellect itself, too, is intelligible. [a'] For either intellect will belong to other things, if it is not intelligible as other but the intelligible is something one in form, or it will be something mixed, which makes it intelligible just like the other things. [a''] Now, to be sure, being acted upon according to something common has been discussed previously, that intellect is in some way potentially the

¹⁶⁵ *Pace* Wedin (1988).

intelligible objects, but not in actuality before it thinks. And it is potentially so just as on a tablet on which nothing is actually written, this very thing happens in the case of intellect. **[b']** And even intellect itself is intelligible just as the intelligible objects. For in the case of things without matter the thinking thing and the thing thought are the same; for theoretical knowledge and the thing known (taken in this way) are the same. **[c]** But we must consider the reason for [our?] not always thinking. **[b'']** But in things having matter each of the intelligible objects is potentially present. So that intellect will not belong to them (for intellect is a potentiality for such things without matter), but the intelligible object will belong to intellect.¹⁶⁶

As we have seen, some say that the active intellect's distinctive activity is initiating particular episodes of thought.¹⁶⁷ Their view may be taken to answer the first puzzle mentioned at the end of the preceding chapter in **[a]** and answered in **[a']** and **[a'']**, namely how intellectual activity could ever get going if intellection is a kind of being-acted-upon, but the receptive intellect is impassible. In addition, Aristotle has discussed previously in III.4 (though without raising a problem about it) how the person possessed of knowledge can contemplate whenever he wishes: perhaps the agent intellect answers the efficient causal need suggested by those remarks.¹⁶⁸ Finally, these “triggering” readings not only explain how particular episodes of thinking can ever get going, but they also purport to explain why we are not always thinking. Aristotle raises this further question and sets it aside while responding to the second main puzzle at the end of III.4, quoted in **[c]** above. So, the human-readings that attribute to the active intellect a role in initiating particular episodes of thought

¹⁶⁶ *De An.* III.4 429b22-430a9: ἀπορήσειε δ' ἂν τις, εἰ ὁ νοῦς ἀπλοῦν ἐστὶ καὶ ἀπαθὲς καὶ μηθεὶν μηθεὶν ἔχει κοινόν, ὥσπερ φησὶν Ἀναξαγόρας, πῶς νοήσει, εἰ τὸ νοεῖν πάσχειν τί ἐστὶν (ἢ γὰρ τι κοινόν ἀμφοῖν ὑπάρχει, τὸ μὲν ποιεῖν δοκεῖ τὸ δὲ πάσχειν), ἔτι δ' εἰ νοητὸς καὶ αὐτός; ἢ γὰρ τοῖς ἄλλοις νοῦς ὑπάρξει, εἰ μὴ κατ' ἄλλο αὐτὸς νοητὸς, ἐν δὲ τι τὸ νοητὸν εἶδει, ἢ μειγμένον τι ἔξει, ὃ ποιεῖ νοητὸν αὐτὸν ὥσπερ τᾶλλα. ἢ τὸ μὲν πάσχειν κατὰ κοινόν τι διήρηται πρότερον, ὅτι δυνάμει πῶς ἐστὶ τὰ νοητὰ ὁ νοῦς, ἀλλ' ἐντελεχεία οὐδέν, πρὶν ἂν νοῆ· δυνάμει δ' οὕτως ὥσπερ ἐν γραμματείῳ ὃ μηθεὶν ἐνυπάρχει ἐντελεχεία γεγραμμένον· ὅπερ συμβαίνει ἐπὶ τοῦ νοῦ. καὶ αὐτὸς δὲ νοητὸς ἐστὶν ὥσπερ τὰ νοητὰ. ἐπὶ μὲν γὰρ τῶν ἄνευ ὕλης τὸ αὐτὸ ἐστὶ τὸ νοῦν καὶ τὸ νοούμενον· ἢ γὰρ ἐπιστήμη ἢ θεωρητικὴ καὶ τὸ οὕτως ἐπιστητὸν τὸ αὐτὸ ἐστὶν (τοῦ δὲ μὴ αἰεὶ νοεῖν τὸ αἴτιον ἐπισκεπτέον)· ἐν δὲ τοῖς ἔχουσιν ὕλην δυνάμει ἕκαστον ἐστὶ τῶν νοητῶν. ὥστ' ἐκείνοις μὲν οὐχ ὑπάρξει νοῦς (ἄνευ γὰρ ὕλης δύναμις ὁ νοῦς τῶν τοιούτων), ἐκείνῳ δὲ τὸ νοητὸν ὑπάρξει.

¹⁶⁷ Cf. e.g. Frede (1996b) and Polansky (2007).

¹⁶⁸ *De An.* III.4 429b5-9.

at will have the advantage of pointing directly to these loose ends from III.4: **[a]** How do episodes of thinking in receptive intellect ever get started and perhaps more precisely, how does one initiate thinking at will? And **[c]** why are we not always thinking? These questions are clearly raised in III.4 without clear answers; these interpretations look to the active intellect of III.5 to answer them, plausibly enough.

On my view, however, it is not the first puzzle (with its cousin questions) but rather the second which leads us naturally into III.5: I look instead to Aristotle's remarks about *intelligibility*. Two things are important to note about the end of III.4 on my view. In the first place, Aristotle seems to say that the first puzzle has already been solved, that sufficient resources are already in place to dissolve the apparent difficulty. He reminds us of this in **[a'']**. Any difficulty that remains for answering **[a]** seems to concern the way in which intellect and intelligibility will obtain or belong (*ὑπάρξει*) to intellect and to the objects of intellect. The problem of acting and being acted upon only arises if we risk mixing intellect with material things, as Aristotle says in the first part of his reply to **[a]** in **[a']**. On my view, then, Aristotle takes up a more determinate worry in **[b]** that isolates what remains of the puzzle from **[a]**. This interpretive strategy gains some further support by the fact that the final line of the chapter recalls the language of **[a']**, suggesting that solving the second problem will resolve any remaining issues from the first, as well. So, I take the second question to have a certain priority, so that adequately answering it will solve any remaining difficulty that the more general act/potency analysis of intellect does not already solve.

The second question in **[b]** concerns whether or not intellect itself is intelligible, and he says rather straightforwardly in **[b']** that intellect itself is intelligible because intellect is without matter. Things without matter can easily come to be identical with the knowing subject, so that the intelligibility of immaterial things is, in some significant respect, beyond question. This reply, while adequately answering the question in **[b]**, nevertheless raises some further questions. First, he remarks in **[c]** that it is not clear, if intellect and knowledge (taken "thusly") are immaterial and therefore intelligible, why we are not always thinking.¹⁶⁹ He also raises in **[b'']** the further issue of the intelligibility of things having matter: although immaterial things are intelligible without question, intelligible objects only belong to or obtain for material things *potentially*.

¹⁶⁹ While there is no first personal language in **[c]** I take it that he is speaking of *our* not always thinking and the intermittence of *human* thought. Although I can see the possibility of other interpretations on grammatical grounds, I have a hard time imagining what the philosophical upshot of an impersonal reading of this line might amount to.

While this section does, in a certain sense, reply to the question raised in [b], and so is justly named [b''] in my breakdown of the passage, it also implicitly raises its own new question and could have just as well been named [d]. For since we (presumably) can know material things, but those things are only *potentially* intelligible, how is it that we can ever come to know them? One gloss on the final lines of III.4 runs thus: “The intelligibility of intellect itself is not an interesting question: intellect is immaterial and so it is almost *automatically* intelligible or intelligible by default. The real question is not whether intellect itself is intelligible, but whether and how material things are intelligible. For insofar as they are material, they are only *potentially* intelligible.” According to this gloss, a question immediately arises that is, we might say, implicit at the very end of the passage above: “[d] But, in the case of things having matter, how is the *noeton* that is potentially present actualized or activated?”

This is perhaps among the greatest pieces of evidence in favor of my reading. According to my interpretation of the Light Analogy, the active intellect’s activity should be specified as “actualizing or activating potentially intelligible objects.” This is, to be sure, an abstract description and may even seem puzzling within the very proximate context of III.5 taken in isolation. But in view of the discussion of intelligibility at the end of III.4, and given the priority of the question about intelligibility to the question about intellectual action and passion in that context, we should not find this description of the active intellect surprising at all. Rather, the intellect posited in III.5 answers the questions raised and fills a role that is called for in the final lines of the preceding chapter, *de Anima* III.4.

2.3.2 Further Specifying Intellectual *Poiēsis* and *Pathētika*

The picture we are left with is an intellectual power of some kind that makes intelligible objects to be actually available for thinking in a way that neither directly accomplishes the activity of thinking nor completely determines the content of thought.¹⁷⁰ Accordingly this intellect does not guarantee the intelligibility of nature generally and for all rational subjects regardless of their engagement, nor is it responsible for the deliberate and self-willed character of contemplative episodes. Its agency is rather found in making available intelligible objects for contemplation. This point follows rather

¹⁷⁰ I describe this here as an “intellectual power,” but I wish to leave open whether this is a power of the human soul or not. I shall have more to say about this question of what the agent intellect is in the final chapter; the bulk of my argument concerns what its activity and correlative patient are.

straightforwardly from my reading of the Light Analogy. My hypothesis is that this activity—activating potentially intelligible objects—describes some part of the learning process. Facilitating learning in an individual case is an activity lying upstream of initiating particular episodes of thinking, yet is not as abstract as endowing the world in general with intelligibility.

This interpretation has not often been discussed in recent years, but when it is considered it is usually summarily dismissed. There are two reasons for this. First, it is unclear where Aristotle might mention this intellectual activity whereby potentially intelligible objects are made available for thinking. As Johansen remarks in a footnote regarding an interpretation similar to my own, “it is not clear that there is such a job for the agent intellect to perform.”¹⁷¹ And secondly, it is unclear what sort of thing might be a proper patient of such an activity: what are potentially intelligible objects? According to most recent views, the two agent/patient pairs that I have distinguished are usually collapsed and confused, so that the active intellect’s patient is the receptive intellect with which we think. But given the preceding discussion, we have reason to think that the proper patient of the active intellect should be the potentially intelligible objects, something analogous to wildflowers at night. Even so, it is not clear what sorts of objects or cognitive items these potentially intelligible objects might be, or what it means to actualize or activate their potential *qua* intelligible.

For these reasons, then, the view that the active intellect plays some role in learning has not received much attention. The argument of the next several chapters works toward answering this need. I shall first consider Aristotle’s idea that, in general, we learn by doing the very things we are learning how to do. I work to square this paradoxical idea with Aristotle’s well-known distinctions between potentiality and actuality. Then, I consider his idea that all intellectual or dianoetic learning, in particular, proceeds from some preexisting *gnosis*. By considering these ethical, metaphysical, and epistemological points in Aristotle’s theory, I draw conclusions for his psychology. In the final chapter I return to this question, “What does active *nous* activate?” with a proposal for the epistemological significance of the active intellect, particularly in the process of teaching and intellectual learning.

But that is only the first of the two pressing questions raised by the preliminary account of this chapter. The other concerns the nature of these potentially intelligible objects and their relationship with the passive intellect. As we shall see, potentially intelligible objects are only potentially so in virtue of their particularized content that is bounded by the here and now.

¹⁷¹ Johansen (2012) 239, n 39.

Cognition of these objects, then, belongs to some part of the perceptual faculty. Nevertheless, insofar as our cognition of them is related to properly intellectual activity, they are rightly called intelligible, albeit with the qualification “potentially.” I shall argue that the passive intellect is that faculty of soul in virtue of which these objects are cognized and made available *qua* potentially intelligible.

My view will, in the end, have a great deal in common with Philoponus, Aquinas, and Brentano among others who concluded that the passive intellect is *phantasia* or something quite like it, and potentially intelligible objects are images when playing a certain role in intellectual activity. But since my method in this dissertation begins not with what these intellectual faculties *are*, but rather with what they *do*, my argument does not end with the idea that passive intellect is *phantasia* and potentially intelligible objects are *phantasmata*. Rather, this is the hypothesis with which I begin, and the argument concerns not the identity or character of these cognitive items, but rather the role they play in intellectual activity properly so-called. Accordingly, my argument will rely heavily on the idea that there is no *noein* without *phantasmata*, and that, in every case, humans think the intelligible forms in the images.

2.3.3 Still Further Questions

While those are the two most pressing questions which will shape the balance of the dissertation, there remain three more questions of interpretation that I shall answer once my own positive account is in place. I note them here as a promissory note. While I do not thoroughly treat of them (for they could require an investigation all to themselves), I address them briefly in the final chapter, indicating the consequences of my account for these questions.

First, I must explain how my reading of the active intellect and of the Light Analogy coheres with the Craft Analogy. While I have given some indication of why I do not prefer interpretive strategies that privilege the Craft Analogy, some questions still remain about my own reading of that analogy and how I resolve the tension between the two. Unfortunately, my reply will not be available until I develop, in more concrete terms, my view of the active intellect’s distinctive activity. So I shall return to this question once I have such an account in hand.

Second, I must explain what it means for the active intellect to think non-intermittently, that is to say, how it “does not at one time think and at another time not think.”¹⁷² In view of the claim from III.4 that we, at any rate, do not always think, and furthermore in view of a standing question regarding why this might be the case, this line in III.5 is particularly interesting. The tension between our intermittent thinking and the active intellect’s non-intermittent thinking stands in need of explanation, along with an account of the reason for each. Although, on my view, our intermittent thinking is not the focus of III.5, I must nevertheless indicate what I take to be the reason for it. But, in order to answer these questions about the non-intermittence of active or productive thinking, I must first give an account of active or productive thinking *as such*: what does it mean for the active intellect to *think* at all? Having done this, I shall return to questions of (non)intermittence at the end.

Finally, and not unrelated to the preceding point, is the question of the divine intellect. Where does Aristotle’s highest intellectual subject and highest intelligible object fit into my account of active intellect? I have said that my main purpose is not to answer questions about the active intellect’s identity or peculiar nature, and so this question properly lies outside of my topic. Nevertheless, my view has some implications for the god-reading: perhaps the divine intellect is the active intellect, but if it is, it must play a much more active role than contemporary god-readings suppose.

2.3.4 Learning, Generic and Specific

But first, given my hypothesis that the active intellect is responsible for some part of the process of learning, the next chapter will consider Aristotle’s account of learning in general. The following chapter will consider applications of this general account to the intellectual case, and in particular to the acquisition of immediate first principles. With an epistemological account of dianoetic learning in place proceeding from genuinely psychological concerns, we will be in a position to describe in more concrete terms the active intellect’s distinctive role—actualizing potentially intelligible objects—and the passive intellect’s relationship to those potentially intelligible objects.

¹⁷² *De An.* III.5 430a22.

3. RECOGNIZING ARISTOTLE'S POTENTIAL: FIRST POTENTIALITY AND THE POSSIBILITY OF LEARNING BY DOING

τὴν παιδεΐαν οὐχ οἷαν τινὲς ἐπαγγελλόμενοι φασιν εἶναι τοιαύτην
καὶ εἶναι. φασὶ δὲ που οὐκ ἐνούσης ἐν τῇ ψυχῇ ἐπιστήμης σφεῖς
ἐντιθέναί, οἷον τυφλοῖς ὀφθαλμοῖς ὄψιν ἐντιθέντες.

---Φασὶ γὰρ οὖν, ἔφη.

Ὁ δὲ γε νῦν λόγος, ἦν δ' ἐγώ, σημαίνει ταύτην τὴν ἐνούσαν
ἐκάστου δύναμιν ἐν τῇ ψυχῇ.¹⁷³

In recent years there has been significant interest in the distinctions Aristotle makes in *de Anima* II.5 between stages of potentiality and actuality or activity, and how they relate to the peculiar character of perceptual and intellectual states and activities.¹⁷⁴ Much of this discussion is born out of related but, I take it, separable debates about the precise way in which perception involves a physiological or material change in the sensory organ, if at all.¹⁷⁵ Because perception is a special kind of being acted on by what is perceptible, in this chapter Aristotle gives an account of this affective specific difference before going on to give more detailed accounts of each of the proper sense faculties in *de Anima* II.7-11. Furthermore, since in *de Anima* III.4 Aristotle considers intellectual activity to be

¹⁷³ *Rep.* VII 518b8-c5.

¹⁷⁴ Cf. e.g. M. F. Burnyeat, "De Anima II.5," *Phronesis* 47 (2002): 28-90; Robert Heinaman, "Actuality, Potentiality and *De Anima* II.5," *Phronesis* 52 (2007): 139-87; John Bowin, "Aristotle on Various Types of Alteration in *De Anima* II.5," *Phronesis* 56 (2011): 138-61; John Bowin, "Aristotle on 'First Transitions' in *De Anima* II 5," *Apeiron* 45 (2012): 262-282.

¹⁷⁵ E.g. Richard Sorabji, "Body and Soul in Aristotle," *Philosophy* 49 (1974), 63-89. Reprinted in *Articles on Aristotle, Volume 4: Psychology and Aesthetics*, edited by Jonathan Barnes, Malcolm Schofield, and Richard Sorabji, (London, 1979): 42-64; Myles Burnyeat, "Is an Aristotelian Philosophy of Mind Still Credible? A Draft" in *Essays on Aristotle's De Anima*, edited by Martha C. Nussbaum and Amelie Oksenberg Rorty, (Oxford: Clarendon Press, 2003): 15-26; Victor Caston, "The Spirit and The Letter: Aristotle on Perception," in *Metaphysics, Soul, and Ethics in Ancient Thought*, edited by Ricardo Salles (Oxford: Clarendon Press, 2005): 245-320.

analogous to perception as a special kind of being acted on by the intelligible object, or something different of a similar sort,¹⁷⁶ it is important also for those investigating his account of intellect to understand the several distinctions of II.5. And it is especially important for those pursuing an activity-first interpretive strategy when it comes to intellect—that is, a strategy focusing on the several relations of agent and patient in the intellectual case—to study the place where Aristotle outlines how the agent-patient analysis should be applied in a special way in the perceptual and intellectual cases.

Accordingly, the more proximate aim of this dissertation chapter is to provide an alternative interpretation of what Burnyeat has called the “Triple Scheme” and the transitions which it involves, classically understood to be introduced in *de Anima* II.5.¹⁷⁷ In particular, I consider the first stage of the schema and ask precisely how this first kind of *dynamis* ought to be understood. I approach this interpretive question obliquely, by considering the relevance of a more general distinction in Aristotle’s philosophy, one between natural and developed or acquired capacities.¹⁷⁸ In II.5 Aristotle treats these two sorts of capacity alongside each other, plausibly showing some analogy between the acquisition, possession, and activation of perceptual capacities and knowledge. He of course notes some disanalogies as the chapter unfolds, but his account (and that of many interpreters) begins with the similarities first.¹⁷⁹ My motivating concern is that Aristotle might not have explicitly flagged all of the dissimilarities between perceptual and intellectual capacities earlier on in this passage, and so parts of the chapter that many have taken to apply to natural and acquired capacities alike, and similarly to their acquisition and development, may turn out to be even more subtle.

¹⁷⁶ Cf. *De An.* III.4 429a13-15: ἢ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἢ τι τοιοῦτον ἕτερον.

¹⁷⁷ I follow Bowin in adopting Burnyeat’s term “Triple Scheme,” though as I shall argue, different versions of this general schema from II.5 and *Phys.* VIII.4 are possible with respect to the relations and transitions between these three stages. I am advocating for a version of the Triple Scheme that is more complex than the model standardly defended by Burnyeat and others, though I am happy to adopt the generic term for the sake of exposition.

¹⁷⁸ In opposing these two categories of capacity, I do not intend to deny that acquired or developed capacities (like the virtues) are both in accord with and perfections of nature. “Natural” here signifies only the manner of coming to be. I follow this usage throughout unless explicitly suggested otherwise.

¹⁷⁹ Heinaman (2007) does disagree with Burnyeat (2002) on this point, arguing that Aristotle’s remarks about the stages of potential knowledge do not generalize to first and second potentiality. However, his argument for this is on the basis of Aristotle’s natural philosophy in *Phys.* VIII.4. Heinaman’s point is negative, whereas mine tries to fill in the positive story: how far do Aristotle’s remarks here generalize? To answer that, we must press on.

This suspicion is confirmed as the investigation continues, when one considers the Triple Scheme as it is standardly understood in the light of this difference between capacities that arise by nature and those developed by other means. According to Aristotle, the latter come to be by prior activity while the former do not. That he holds this in the case of moral virtues is well known and his defense of the coherence of his account is often discussed; it is not usually noted, however, that Aristotle is committed to the very same principle in the case of properly intellectual virtues.¹⁸⁰ All kinds of learning, then, are accomplished by engaging in the relevant kind of prior activity, namely by doing the very thing one is learning to do. So goes Aristotle's well-known Learning Principle (as I shall call it): we come to be temperate by doing temperate things and house-builders by building houses and, in general, we acquire and develop moral and intellectual *hexeis* by engaging in prior activity of an appropriately identical sort.

This thought, though intuitive, presents a puzzle: how can someone do the very things he is learning to do *before* he learns them? Either a student will remain hopelessly ignorant because of his present inability to do the things he wants to learn, or he can already do them and therefore does not need to learn.¹⁸¹ I here propose a new way of thinking through this paradoxical yet intuitive claim about learning, in particular by revisiting Aristotle's distinctions between kinds of potentiality and actuality. These distinctions, in my view, help to articulate his Learning Principle in more precise terms, removing any apparent difficulty. A very common way of interpreting those distinctions, however, is not only unhelpful in illuminating and defending the Learning Principle but is also straightforwardly incompatible with it. In order to avoid attributing an outright contradiction to Aristotle, then, in this chapter I propose an alternative interpretation of these distinctions in kinds of potentiality and actuality.

In particular, in *de Anima* II.5 Aristotle outlines three stages: (1) having the capacity to learn grammar, (2) having learned grammar, and (3) actively deploying grammatical knowledge. It is uncontroversial that Aristotle distinguishes these three stages, which have together come to be called the Triple Scheme. As these distinctions are typically understood, however, the first stage is regarded merely as a passive capacity to learn grammar and to undergo an intellectual change of some sort, but not yet as an active capacity to do grammatical things in any way. According to this Standard

¹⁸⁰ Cf. e.g. *EN* II.1, 4 and *Meta.* Θ.5, 8. I shall explore these passages in detail in the coming pages. Kosman (2003) and Burnyeat (2002) make note of this, though I disagree with them on specifics.

¹⁸¹ This puzzle bears obvious similarities to Meno's paradox.

View (as I shall call it), one cannot do grammatical things, even imperfectly, until one has already learned it. The capacity to learn at the first stage, then, is commonly regarded only as a capacity for acquiring or developing an actual capacity, but not yet as a capacity for engaging in the relevant activity, again, even in an unrefined way.¹⁸²

The focus of this chapter, then, is how to resolve a tension between these two well-known pieces of Aristotelian doctrine. On the one hand, the Learning Principle indicates that we learn by doing the very things we are learning to do. On the other hand, the capacity that an unlearned person has to learn is not typically regarded also and already as a capacity to engage in the relevant prior activity. The tension is clear: one account of learning requires doing the very things one is learning to do, while another characterization seems to rule this distinctive sort of prior activity out. The guiding question of this third chapter is: how ought we to interpret the distinctions in II.5 and the Triple Scheme derived therefrom in a way that is informed by Aristotle's Learning Principle? Do constraints on the very possibility of learning-by-doing offer any insight into the various metaphysical distinctions Aristotle introduces in kinds of actuality and potentiality, and in particular how we ought to conceive of first potentiality?¹⁸³ Or, conversely, do these technical distinctions offer any help in understanding Aristotle's Learning Principle, rendering it more defensible in the face of *prima facie* charges of incoherence?

My answer to both questions is in the affirmative: I shall argue, in the course of this chapter, that an interpretation of II.5 and related passages that is, in the first place, informed by an abstract theoretical constraint issuing from Aristotle's Learning Principle will, in the second place, help to render that very same principle more intuitive. Accordingly, I propose at the outset the following general constraint on an adequate interpretation of first potentiality in particular and of the Triple Scheme more generally: the possibility of learning-by-doing as given in Aristotle's Learning Principle must not be ruled out from the start. Therefore, I begin my investigation with a more thorough treatment of this principle and what it entails. In the final analysis, I conclude that, for Aristotle, the capacity to learn must also be the capacity to engage in the prior activity by which we learn.

¹⁸² "Potentiality," "capacity," and "capability" translate *dynamis* interchangeably. "Potentiality" and "capacity" are used the most; "capability," is preferable in some contexts, being related to the English "capable" as *dynamis* is related to *dynatos*. My choices are determined by what sounds most suitable in English; it does not mark a philosophically relevant distinction.

¹⁸³ I follow the traditional convention of calling stage (1) "first potentiality," which is based in large part on comparing II.5 with II.1 where "first actuality" is introduced. Though I do call some aspects of this comparison into question, for the purposes of terminology I shall follow the convention.

3.1 ARISTOTLE'S LEARNING PRINCIPLE

Aristotle's view that we learn by doing is both intuitive and puzzling. He concludes early in his treatment of moral virtue in *Nicomachean Ethics* II that we come to be temperate by doing temperate things, just as we come to be house builders by building houses and grammatical people by doing grammatical things.¹⁸⁴ He cites the same principle as evidence for another argument in *Metaphysics* Θ.8, that one cannot become a house builder or a lyre player without ever having engaged in the activities of house building or lyre playing.¹⁸⁵ That passage is followed immediately by a further argument in which Aristotle mentions the very same principle, but this time as providing a possible (yet upon reflection unproblematic) exception to a teleological argument.¹⁸⁶ So, this **Learning Principle** is clearly on Aristotle's mind, either doing explicit work in explaining how we learn or otherwise generating possible evidence or counter-evidence for arguments related to actuality and potentiality more broadly. And yet both in the *Nicomachean Ethics* and in the *Metaphysics*, Aristotle explicitly admits the apparent puzzle: how can one exercise a capacity in order to acquire it, that is, *before* one acquires it?

3.1.1 The Learning Principle Introduced

Before delving into the details of this challenge or Aristotle's responses to it, let us consider the principle itself. His remarks from the opening of *Nicomachean Ethics* II express a familiar thought:

Again, of all the things that come to us by nature (ὅσα φύσει ἡμῖν παραγίγνεται), we acquire capacities of them beforehand and later exhibit the activities (this very thing is clear in the case of the senses: for it was not from often seeing or often hearing that we received these senses, but rather, having them we used them, and did not

¹⁸⁴ Cf. *EN* II.1103a26-b2 and II.4 1105a22-25. Grammar is Aristotle's example, though becoming *grammatikos* is more precisely rendered into English by "literate." I shall continue using the English "grammatical," however, due to complexities in English when describing how we "come to be literate speakers or writers by saying or writing literate (sc. grammatical) things." Aristotle's Greek turns on the same adjective *grammatikos* describing the speaker or writer and the spoken or written word. In order to preserve this parallelism, I prefer to stretch English usage by calling a speaker or writer "grammatical" rather than calling a spoken or written word "literate."

¹⁸⁵ Cf. *Meta.* Θ.8 1049b27-50a3.

¹⁸⁶ Cf. *Meta.* Θ.8 1050a4-14.

come to have them by using them); but the virtues we get by having exercised beforehand (τὰς δ' ἀρετὰς λαμβάνομεν ἐνεργήσαντες πρότερον), just as also in the case of the arts. For the things that are necessary for us to have learned to do, we learn by doing them (ἅ γὰρ δεῖ μαθόντας ποιεῖν, ταῦτα ποιοῦντες μανθάνομεν), for example people become builders by building and lyre players by playing the lyre; indeed in this way also we become just by doing just things, temperate by doing temperate things, courageous by doing courageous things.¹⁸⁷

Aristotle thus begins his account of moral virtue by showing how this class of capacities is different from those that arise by nature, like the senses.¹⁸⁸ He of course qualifies his point to allow that the moral virtues are not *contrary* to our nature, since things in general cannot be habituated contrary to their nature. The virtues—at least the moral ones, and plausibly also the intellectual ones—do not arise *by* nature but are nevertheless perfections *of* nature.¹⁸⁹

Now, I concede that Aristotle here in the *Nicomachean Ethics* quite clearly speaks of virtue “being perfected by habituation” (τελειουμένοις δὲ διὰ τοῦ ἔθους) and makes other similar references to habituation (ἔθος), so that any extension of his conclusions from the moral to the intellectual case would require further argument. And while he speaks of virtue and learning without qualification here, in the opening lines of *Nicomachean Ethics* II Aristotle seems explicitly to restrict his discussion to moral virtues and their distinctive mode of development.¹⁹⁰ So, at first, one might

¹⁸⁷ *EN* II.1 1103a27-b3, following Ross: ἔτι ὅσα μὲν φύσει ἡμῖν παραγίνεται, τὰς δυνάμεις τούτων πρότερον κομιζόμεθα, ὕστερον δὲ τὰς ἐνεργείας ἀποδίδομεν (ὅπερ ἐπὶ τῶν αἰσθήσεων δῆλον· οὐ γὰρ ἐκ τοῦ πολλάκις ἰδεῖν ἢ πολλάκις ἀκοῦσαι τὰς αἰσθήσεις ἐλάβομεν, ἀλλ' ἀνάπαλιν ἔχοντες ἐχρησάμεθα, οὐ χρησάμενοι ἔσχομεν)· τὰς δ' ἀρετὰς λαμβάνομεν ἐνεργήσαντες πρότερον, ὡσπερ καὶ ἐπὶ τῶν ἄλλων τεχνῶν· ἅ γὰρ δεῖ μαθόντας ποιεῖν, ταῦτα ποιοῦντες μανθάνομεν, οἷον οἰκοδομοῦντες οἰκοδόμοι γίνονται καὶ κιθαρίζοντες κιθαρισταί· οὕτω δὲ καὶ τὰ μὲν δίκαια πράττοντες δίκαιοι γινόμεθα, τὰ δὲ σῶφρονα σῶφρονες, τὰ δ' ἀνδρεῖα ἀνδρεῖοι.

¹⁸⁸ See also *EN* II.4. I cannot give a full treatment of the subtle issues specific to the acquisition of *moral* virtue here. My aim is to abstract from the moral case and discuss what holds generically of both moral and intellectual virtue, as I shall argue in what follows.

¹⁸⁹ Cf. *EN* II.1 1103a20-26.

¹⁹⁰ Cf. *EN* II.1 1103a14-19: “Virtue, then, being of two kinds, intellectual and moral, intellectual virtue for the most part has both its birth and its growth by teaching (for which reason it requires experience and time), while moral virtue comes about by habituation, whence also its name is one that is formed by a slight variation from the word “habituation.” From this it is also plain that none of the **moral virtues** arises in us by nature, for nothing existing by nature is habituated otherwise” (following Ross). Διττῆς δὴ τῆς ἀρετῆς οὕσης, τῆς μὲν διανοητικῆς τῆς δὲ ἠθικῆς, ἢ μὲν

reasonably suspect that the idea of learning-by-doing discussed in the above passage may also be restricted to the moral case, and not apply to other acquired capacities such as the intellectual virtues. Accordingly, one might reasonably suppose on the basis of this passage alone that “learning-by-doing” is straightforwardly synonymous with “learning-by-practice” or “learning-by-habituation.”¹⁹¹

On the contrary, however, even in this passage the point extends beyond the ethical or moral case to other learned capacities that similarly do not arise by nature, “also in the case of the arts.” And later in *Nicomachean Ethics* II.4 he applies the same principle to someone learning grammar (quoted below). In the same spirit, three passages from *Metaphysics* Θ explicitly apply this principle to the development of intellectual virtues as well as moral ones, so that we acquire all the virtues through prior activity, learning by doing those very things which we are learning how to do. As I shall show, then, the Learning Principle’s insistence on prior activity applies generically to all cases of learning, both moral and intellectual, and is therefore not sufficiently captured by “habituation” (ἔθος).

3.1.2 The Learning Principle in *Metaphysics* Θ.5

In the first place is Θ.5, at the beginning of which Aristotle makes a distinction between types of capacities. I shall begin with this passage from *Metaphysics* Θ and return to the other two passages mentioned as the chapter unfolds. To wit:

[a] Since all capacities are either innate (like the senses), arise by habituation (like that of flute-playing), or arise by learning (like that of the arts): [b] on the one hand it is necessary that we possess those [coming to be] by habituation and by *logos* having previously exercised them, [c] on the other hand it is not necessary [for] those [capacities] not of this sort, i.e. those which involve being-acted-upon.¹⁹²

διανοητικὴ τὸ πλεῖον ἐκ διδασκαλίας ἔχει καὶ τὴν γένεσιν καὶ τὴν αὐξησιν, διόπερ ἐμπειρίας δεῖται καὶ χρόνου, ἢ δ’ ἠθικὴ ἐξ ἔθους περιγίνεται, ὅθεν καὶ τοῦνομα ἔσχηκε μικρὸν παρεκκλίνον ἀπὸ τοῦ ἔθους. ἐξ οὗ καὶ δῆλον ὅτι οὐδεμία τῶν ἠθικῶν ἀρετῶν φύσει ἡμῖν ἐγγίνεται· οὐθέν γὰρ τῶν φύσει ὄντων ἄλλως ἐθίζεται.

¹⁹¹ Cf. e.g. Hamlyn (1976) 175ff., Kosman (2003) 352, Bronstein (2008) 210-216. Burnyeat (2002) 61 recognizes this, but dismisses it “None of this is on display in *De Anima* II 5.”

¹⁹² *Meta.* Θ.5 1047b31-35: Ἀπασῶν δὲ τῶν δυνάμεων οὐσῶν τῶν μὲν συγγενῶν οἷον τῶν αἰσθήσεων, τῶν δὲ ἔθει οἷον τῆς τοῦ αὐλεῖν, τῶν δὲ μαθήσει οἷον τῆς τῶν τεχνῶν, τὰς μὲν

This passage and *Nicomachean Ethics* II.1 are two *loci classici* in which Aristotle describes the notion of prior activity in learning. Here in Θ .5 Aristotle uses a participle of a compound verb (προενεργήσαντας, from προενεργεῖν), while there in *Nicomachean Ethics* II.1 he uses a participle modified adverbially (ἐνεργήσαντες πρότερον, from ἐνεργεῖν πρότερον). This is a first important point of similarity between the two passages, though here in Θ .5 Aristotle quite explicitly applies his Learning Principle to both kinds of development alike, to capacities arising by habituation and by learning or *logos*.¹⁹³ Thus the notion of prior activity quite clearly applies to moral and intellectual formation alike, and is therefore not distinctive of those capacities arising by habituation (ἔθει).

A second important point of similarity between these passages concerns the extensional scope of the distinction Aristotle has in view. Both passages oppose, on the one hand, innate (τῶν μὲν συγγενῶν) or naturally acquired capacities (ὅσα φύσει ἡμῖν παραγίγνεται) and those capacities that, on the other hand, are acquired either by habituation (τῶν δὲ ἔθει and ὅσαι ἔθει) or by learning and *logos* (τῶν δὲ μαθήσει and ὅσαι [...] λόγῳ), or generally speaking things that we must learn how to do (ἃ γὰρ δεῖ μαθόντας ποιεῖν). These descriptions line up fairly straightforwardly so that, at least extensionally, he is distinguishing the same kinds of capacity in each case. Those capacities that arise for us by nature are all and only those capacities which are innate. And those capacities that are acquired by habituation or by *logos* are all and only capacities for things that we must learn how to do.¹⁹⁴

ἀνάγκη προενεργήσαντας ἔχειν, ὅσαι ἔθει καὶ λόγῳ, τὰς δὲ μὴ τοιαύτας καὶ τὰς ἐπὶ τοῦ πάσχειν οὐκ ἀνάγκη.

¹⁹³ Due to difficulties in translation, I shall ordinarily leave *logos* untranslated.

¹⁹⁴ One might still worry that the distinctions in *EN* II.1 are not exhaustive, so that Aristotle may be opposing natural and ethical capacities while remaining silent there on the third class of dianoetic capacities. This view may be recommended by Aristotle's remarks in the opening line of *EN* II, in which he sets aside the dianoetic virtues for consideration later. We can say three things in reply to this worry. First, as long as the class of innate capacities is coextensive between the two passages, there is sufficient similarity for the comparison to be helpful regarding both kinds of virtue. This is admittedly a weak reply. But we can add to this, now that we have considered Θ .5, that what he says there about the virtues should hold of both moral and intellectual virtues, most notably what he says about acquisition by prior activity. There need be no conflict between these passages simply because one provides an analysis that is narrower in scope more suitable to that context. What is more, and this is the third point, in *EN* he includes the arts and the virtues in the class of "things which we must learn to do" (ἃ γὰρ δεῖ μαθόντας ποιεῖν). Including the arts as an example suggests that we read the relative clause as exhaustive, rather than restricted to certain kinds of learning: τέχνη is, after all, a category of intellectual or dianoetic virtue as we learn later in *EN* VI.4 while still in the

Another notable similarity between the passages concerns how Aristotle goes on to apply the distinction in the balance of $\Theta.5$. He there distinguishes these two kinds of capacity as those which admit of a single activation and those which admit of two (or perhaps more) modes of activity. Since non-rational potencies only admit of one mode of activation, whenever that which is capable of acting meets that which is capable of being acted upon in the right way, the correlative potencies are activated and their joint activity ensues straightaway. For example, whenever that which is capable of heating meets that which is capable of being heated, the joint activity of heating and being-heated immediately begins.¹⁹⁵

But rational capacities ($\tau\alpha\ \kappa\alpha\tau\grave{\alpha}\ \lambda\acute{o}\gamma\omicron\nu$), Aristotle points out, admit of contrary activations so that, for example, the physician can use the medical art to heal or to harm some patient. As a result, capacities of this sort do not activate as soon as agent and patient meet, since something further must determine which mode of activation obtains. When the medical agent meets the medical patient, it is yet undetermined whether health or disease will result. Accordingly Aristotle posits desire or deliberate choice ($\delta\omicron\rho\epsilon\zeta\iota\nu\ \eta\ \pi\rho\omicron\alpha\acute{\iota}\rho\epsilon\sigma\iota\nu$) as determining precisely how the capacity is activated, how the agent acts upon the patient, in any given case.¹⁹⁶ Let us set aside the role of this “other deciding factor” ($\acute{\epsilon}\tau\epsilon\rho\omicron\nu\ \tau\iota\ \tau\omicron\ \kappa\acute{\upsilon}\rho\iota\omicron\nu$), whether desire or choice, but we shall return to it in a later section. For the present, let us attend to the distinctive feature of rational capacities that drives Aristotle to posit this other factor at all. It is a certain indeterminacy of activity that remains even when the rational capacities ($\tau\alpha\ \kappa\alpha\tau\grave{\alpha}\ \lambda\acute{o}\gamma\omicron\nu$) have been developed.

ethical context. It is not, of course, a speculative or theoretical virtue like $\acute{\epsilon}\pi\iota\sigma\tau\acute{\eta}\mu\eta$, $\nu\omicron\delta\zeta$, or $\sigma\omicron\phi\acute{\iota}\alpha$. Further evidence for this can be drawn from *EN* II.4 and *de Anima* II.5 since, in the first passage, grammar is given as a craft example to which the **Learning Principle** applies and, in the second passage, grammar is the example of knowledge ($\acute{\epsilon}\pi\iota\sigma\acute{\eta}\mu\eta$) with respect to which someone is said to be a knower in varying degrees. We shall return to a consideration of these passages.

¹⁹⁵ Although something’s “being heated” would be a passive affection or suffering ($\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$), this would still be characterized as a kind of activity ($\acute{\epsilon}\nu\epsilon\rho\gamma\epsilon\acute{\iota}\nu$), correlative in one sense with the activity of heating, but also in another sense with the capability of being heated. Cf. *Meta.* $\Delta.15$ 1021a14-19: “And active and passive things [are relative] according to active and passive capacity ($\kappa\alpha\tau\grave{\alpha}\ \delta\acute{\upsilon}\nu\alpha\mu\iota\nu$) and to the activations of the capacities ($\acute{\epsilon}\nu\epsilon\rho\gamma\epsilon\acute{\iota}\alpha\varsigma\ \tau\acute{\alpha}\varsigma\ \tau\omicron\omega\nu\ \delta\upsilon\nu\acute{\alpha}\mu\epsilon\omega\nu$), such as that which can heat is relative to that which can be heated, and again that which is heating is relative to that which is being heated and that which is cutting to that which is being cut, in virtue of being actively engaged ($\acute{\omega}\varsigma\ \acute{\epsilon}\nu\epsilon\rho\gamma\omicron\upsilon\nu\tau\alpha$).” We shall return to this point later in the chapter.

¹⁹⁶ Cf. *Meta.* $\Theta.5$ 1048a5-15.

An important question remains, however, concerning the habituated capacities in the context of Θ.5: though mentioned at the outset, the ensuing discussion only concerns rational and non-rational capacities. Natural capacities (e.g. to heat or be heated) clearly belong to the class of non-rational; given the opposition of habituation and *logos* in the opening of the chapter we might also conclude that habituated capacities belong to it, as well.¹⁹⁷ This point is confirmed in part by remarks at the beginning of *Nicomachean Ethics* V, where Aristotle says:

For things do not stand in the same way concerning the sciences and capacities as concerning the states. For the same capacity or science seems to be of contraries, but the contrary state is not of contraries, e.g. contrary things are not done as a result of health, but healthy things only.¹⁹⁸

So, once they have been habituated, ethical or bodily *hexeis* are more like natural capacities than rational ones, admitting of only one sort of activation. But *before* they are developed, they share the same indeterminacy as the sciences and arts do when developed. While the person who has already been successfully habituated to possess a moral virtue (or unsuccessfully, to possess vice), and also the person whose bodily capacities been habituated to possess a certain state like health, the person does not then admit of a range of activity, nevertheless that his capacities can *in the first place* be habituated either way does show that these capacities as such can admit of various modes of activity. Once the relevant capacity comes to have a certain habituated state, no variability remains (unlike rational capacities), but the prior possibility to acquire contrary states is enough to show the similarity between the *first* stage of potentiality in the intellectual and moral cases, in contrast to the natural capacities which do not admit of development by prior activity. On this point, both the *Ethics* and the *Metaphysics* passages recognize as distinctive capacities that admit of a range of activities, at least at some stage.

Returning to *Nicomachean Ethics* II.1, let us consider something Aristotle says immediately before our passage:

From this it is also clear that none of the moral virtues comes to be in us by nature; for none of the things existing by nature can be habituated contrary to nature. For example, the stone which by nature moves downwards could not be habituated to

¹⁹⁷ Cf. e.g. *EN* I.13 and VI.2 on the irrational parts of the soul and their attendant virtues.

¹⁹⁸ *EN* V.1 1129a11-16: οὐδὲ γὰρ τὸν αὐτὸν ἔχει τρόπον ἐπὶ τε τῶν ἐπιστημῶν καὶ δυνάμεων καὶ ἐπὶ τῶν ἕξεων. δύναμις μὲν γὰρ καὶ ἐπιστήμη δοκεῖ τῶν ἐναντίων ἢ αὐτὴ εἶναι, ἕξις δ' ἢ ἐναντία τῶν ἐναντίων οὐ, οἷον ἀπὸ τῆς ὑγείας οὐ πρᾶτται τὰ ἐναντία, ἀλλὰ τὰ ὑγιεινὰ μόνον.

move upwards, not even if one tries to habituate it by casting it upwards ten thousand times; nor can fire be habituated to move downwards, nor can anything else that is disposed by nature in one way be habituated in another. Consequently, the virtues come to be in us neither by nature nor contrary to nature, but rather we are disposed by nature to receive them, and they are brought to perfection by habit.¹⁹⁹

Aristotle's argument concerning the impossibility of habituating a stone's motion relies on the assumption that a stone only admits of one kind of natural motion, that is, downward motion. Where *Metaphysics* Θ.5 is, for the most part, silent on habituation, the argument of *Nicomachean Ethics* II.1 concerns habituation and therefore properly moral virtue, concluding that "none of the things arising by nature can be habituated differently" (οὐδ' ἄλλο οὐδὲν τῶν ἄλλως πεφυκότων ἄλλως ἂν ἐθισθείη).²⁰⁰ Though specific to habituation, this claim rests upon a more general fact about capacities which arise by nature and those that do not. In the purely natural case, the mode of actualization is fixed and does not admit of being otherwise, while for other capacities the mode of actualization admits of some variation. As soon as a natural capacity is truly present, it is no longer capable of development or varying activation; before that time, no activity is possible at all. The argument here is somewhat overdetermined because of the ethical context: Aristotle's purpose is only to deny that *ethical* virtues can arise in us by nature. But the reason why stones cannot be habituated to move any differently is because their natural capacity for locomotion does not admit of varying actualization in general. On the authority of *Metaphysics* Θ.5 and *Nicomachean Ethics* II.1 we know that our *capacities* for moral and intellectual virtues are alike in this, at least: they *do* admit of varying actualization.

In view of these arguments, however, one notable difference between the two passages does become clear: where the *Ethics* passage considers differences in the acquisition or development of these capacities, whether natural or acquired, the passage in *Metaphysics* Θ.5 considers their activation once they have already become fully developed. This is an interesting difference between the

¹⁹⁹ EN II.1 1103a18-26, following Ross: ἐξ οὗ καὶ δῆλον ὅτι οὐδεμία τῶν ἠθικῶν ἀρετῶν φύσει ἡμῖν ἐγγίνεται· οὐθὲν γὰρ τῶν φύσει ὄντων ἄλλως ἐθίζεται, οἷον ὁ λίθος φύσει κάτω φερόμενος οὐκ ἂν ἐθισθείη ἄνω φέρεσθαι, οὐδ' ἂν μυριάκις αὐτὸν ἐθίξη τις ἄνω ριπτῶν, οὐδὲ τὸ πῦρ κάτω, οὐδ' ἄλλο οὐδὲν τῶν ἄλλως πεφυκότων ἄλλως ἂν ἐθισθείη. οὕτ' ἄρα φύσει οὔτε παρὰ φύσιν ἐγγίνονται αἱ ἀρεταί, ἀλλὰ πεφυκόσι μὲν ἡμῖν δέξασθαι αὐτάς, τελειουμένοις δὲ διὰ τοῦ ἔθους.

²⁰⁰ EN II.1 1103a20.

passages, and raises important questions about the two passages' distinct purposes. I might suggest, for instance, that while *Metaphysics* Θ is concerned with different kinds of activity and the ways in which activity is prior to potentiality, the *Ethics* is more concerned with how we come to be virtuous and possess virtuous *hexeis*, at least when beginning the account of moral virtue in the second book. Accordingly, we are more likely to find discussions that focus on the acquisition of *hexeis* in the ethical context, rather than in the metaphysical context where *energeia* is of greater interest. But for our present inquiry what is interesting is more general: both passages rely upon the same basic distinction between the same kinds of capacity, making mention of the same distinctive features of each.

We can conclude, then, that while Aristotle's discussion in *Nicomachean Ethics* II.1 is directed in a special way toward the moral case, his remarks about moral virtue should not be taken to exclude the intellectual case entirely, on the authority of *Metaphysics* Θ.5. Similarly, although the discussion in *Metaphysics* Θ.5 is directed in a special way toward the exercise of rational capacities, the same general principle applies to habituated capacities. There are, to be sure, differences between habituated and rational capacities in precisely *how* the general principle applies. But prior activity is somehow involved in the development of any and all capacities which do not arise simply in the ordinary course of nature.

3.1.3 Intellectual Habits and Habituation

At this point a difficulty may arise due, in part, to conventions in translating Aristotle's Greek into modern English, and so occasions a bit of an interlude. As things stand, "habit" can render both Greek words *ethos* and *hexis*: though the former is more common in recent literature, the latter has an old-fashioned claim to the word, as well. The difficulty arises, it seems, from the Latin *habitus* for *hexis*, given the relation between *habere* and *echein*, so that it became common in Scholastic authors to refer, for instance, to the *habitus scientiae* for *hexis epistēmēs*, the intellectual virtue of scientific knowledge.²⁰¹ So when using "habit" in this way, following the Latin convention, the meaning of the

²⁰¹ See, for instance, the Cooke translation in the Loeb edition of the *Categories* (1937). First, at 8b25-29: "By 'quality' I mean that in virtue of which men are called such and such. The word 'quality' has many senses. Let habits and dispositions here constitute one kind of quality. The former are unlike the latter in being more lasting and stable. Comprised among what we call 'habits' are virtues and all kinds of knowledge." And later at 9a5-8: "Those qualities, then, it is clear, men incline to denominate 'habits,' which are by their nature more lasting and the more hard to displace. Those

term is weaker and its scope broader, simply signaling the possession of some stable state. Importantly, using this sense of “habit” does not preclude an intellectual or dianoetic application, as is seen most notably with the Latin *habitus scientiae* already mentioned. But, of course, colloquially the English “habit” has a narrower and more restricted sense, signaling something acquired by practice or habituation. I shall here set aside the interesting etymological work one could do to explain this phenomenon; the important thing for our purposes is to note the potentially perilous ambiguity. While it is true that, for Aristotle, intellectual virtues are not strictly-speaking acquired by habituation (ἔθει), we must maintain that even intellectual virtues are habits in the sense of developed and stable states (ἔξεις).²⁰²

This much should be uncontroversial given what Aristotle says in *Nicomachean Ethics* VI, as well as in the *Physics* and *Metaphysics*.²⁰³ Yet it can be an early point of confusion when giving an account of the acquisition of *hexeis* quite generally, as opposed to detailing what holds specifically of the process of habituation and those distinctively ethical *hexeis*, the truly habituated habits. Again, Aristotle claims that all *hexeis* coming to be by habituation (ἔθει) or by rational account (λόγῳ) arise by prior activity: we have concluded, therefore, that prior activity alone cannot be what makes habituation or the acquisition of ethical virtues distinctive. Aristotle is quite clear that those virtues arising by *logos* arise through prior activity as well. Habituation and *logos* must specify the kind of

who cannot at all master knowledge and are of a changeable temper are scarcely described nowadays as possessing the ‘habit’ of knowing, although we might say that their minds, when regarded from that point of view, are disposed in a way towards knowledge—I mean, in a better or worse.” See also the Freese translation of the Loeb edition of the *Rhetoric* (2006, first published 1926) at 554a7-8: “Now, the majority of people do this either at random or with a familiarity arising from habit (ἀπὸ ἔξεως).” Finally, see Aquinas’s *Commentary on the de Anima: habitus scientiae* at §359 and *habitualiter* at §367, *ad loc.*

²⁰² This ambiguity can cause difficulty when speaking of grades of knowledge, as well. Those familiar with the Scholastic way of speaking will be comfortable speaking of potential, habitual, and actual knowledge to describe the three stages of the Triple Scheme, where here “habitual” describes the kind of knowledge belonging to one who has or possesses (ἔχει) the relevant intellectual virtue, that is, a *hexis*. In recent literature “habitual” has given way to “dispositional” (cf. e.g. Polansky (2007) 232 and Kosman (2013) 59), though this choice is not without its own cost given the subtle distinction in Aristotle between state (ἔξεις) and disposition (διάθεσις). The grammatical limitations of “state” are obvious, despite its attractiveness otherwise, given misleading English senses of “static” or “statically.”

²⁰³ “We must undertake, then, [to discover] what the best *hexis* is of each of these, for that is the virtue of each” (VI.1 1139a16-17). See also, for example, *Phys.* VII.3 in which Aristotle discusses the acquisition of bodily, moral, and intellectual *hexeis*, and *Meta.* Θ.5, already mentioned above.

prior activity that the learner must engage in, rather than prior activity being involved in one kind of learning only, and not in the other. This means that insofar as learning by habituation (ἔθει) is typically called “learning through practice” in recent literature,²⁰⁴ we ought not thereby to conclude that practice or habituation is the only kind of learning through prior activity. In fleeing that mistake, however, we must not claim that intellectual learning itself is a kind of “learning through practice” or “intellectual habituation.”²⁰⁵ Habituation, unlike prior activity, *is* distinctive to moral virtue. This is why I have so far chosen to refer to “learning by doing” to describe the prior activity which holds generically of both cases.

3.1.4 Toward a Generic Specification of the Learning Principle

Given that our ultimate inquiry is into intellectual virtues and activities, our larger objective is to discover how one might learn through prior activity by *logos* rather than by *ethos*, how one engages in intellectual activity in order to learn intellectually, without making it so that intellectual and moral virtues alike are acquired by habituation alone or are “learned through practice.”²⁰⁶ But before we can begin that inquiry in earnest, it would help to have a metaphysical picture in place which applies to the acquisition of all psychic *hexeis*, both moral and intellectual, arising by *logos* and by habituation alike.²⁰⁷ And even beyond the scope of this dissertation, as I shall argue, much of what has seemed puzzling about Aristotle’s Learning Principle concerns not what is specific to moral formation but something more generic. Therefore, I here seek to offer a defense of the coherence of the Learning

²⁰⁴ Insofar as “practice” is meant to render μελέτημα or μελέτη, I have no problem characterizing prior activity as “learning through practice.” But there is sufficient opportunity for misunderstanding, insofar as “practice” is meant to render *ethos*. Bowin (2011) is a good case: at 143 n11 he contrasts learning through practice and learning by *logos*, “merely through absorbing it from a teacher.”

²⁰⁵ Recall Hamlyn (1976) 175f., Bronstein (2008) 210-216, Burnyeat (2002) 61, Kosman (2003) 352. Polansky (2007) also seems to suggest something along these lines, at 233: “Aristotle uses the term ἔξις in 417a32, which we must translate as ‘habit,’ ‘state,’ ‘condition,’ or ‘disposition.’ As emphasized in the ethical works, habits or dispositions, whether moral or intellectual virtues, develop through practice or habituation (see *NE* ii 1, *EE* ii 2, *MM* I 6, *Meta.* 1049b29-1050a2).” Note the equivocal use of “habit” from *hexeis* and “habituation,” which, as I have just described, renders *ethos* and not *hexeis*.

²⁰⁶ This is the project of the following dissertation chapter.

²⁰⁷ Cf. *Phys.* VII.3 which describes moral and intellectual *hexeis* as *hexeis* of the soul.

Principle in general, considering only what applies generically and abstracting from what is peculiar to the more often discussed moral case, or indeed to the intellectual case to be discussed later.

One suggestion for an abstract and generic specification of the Learning Principle given the discussion so far: in order to acquire a *hexis*, one must—in a way yet to be determined—engage in the very same activity toward which the *hexis* under development is directed. We learn to φ by φ -ing and we develop a capacity to φ by φ -ing, by engaging in the very same activity toward which the capacity under development is directed.²⁰⁸ That is, in order to become learned, the student must somehow engage in an activity that is—at some non-trivial level of description—the same as the expert’s. In this way, we become temperate by doing temperate things and knowledgeable by doing knowledgeable things: on Aristotle’s view the student certainly performs activities of these kinds *somehow*, though indeed the student as yet lacks the relevant virtue. So, much weighs on the adverbial qualifier “somehow” here, as will be noted by those, both ancient and contemporary, who might charge Aristotle with incoherence on this point. But for now let us set this issue aside for clarification later, leaving the placeholder “somehow” to do its place-holding work.

But even granting that the Learning Principle in some generic way applies also to intellectual virtues, so that prior activity must be somehow involved, one may object that this precise specification “becoming temperate by doing temperate acts” (1103b1) or generally “learning to do things by doing them” (1103a32-33) may apply more specifically to the moral virtues and arts acquired by habituation, to that distinctive mode of prior activity. After all, I am already conceding that in *Nicomachean Ethics* II.1 Aristotle is making a distinctively ethical point and applying this theoretical machinery to begin a treatment of moral virtue in particular. And it may be that, though artistic skills bear something in common with and plausibly count as intellectual virtues,²⁰⁹ some are

²⁰⁸ It is possible that these two descriptions are subtly different, learning to φ and developing a capacity to ψ . So perhaps, at this stage, one could use two different Greek variables here (as I have done in this note, differently from the body text). As I shall argue, however, this is an unnecessary complication: on Aristotle’s view, the verbal specification of that which is being learned or developed is the same as the prior activity one performs in order to learn or develop it. I shall argue for this view presently.

²⁰⁹ I note here that, though τέχνη is included in the excellent states of the rational soul discussed in *EN* VI, there may be subtle reasons for denying that the possession of an art counts as a possession of a dianoetic virtue properly so-called. On this question cf. VI.5 at 1140b22-30, which some take to be evidence that τέχνη is not itself a virtue, but that there is virtue *of* τέχνη. It is not clear to me that one needs to deny that τέχνη in general is a virtue of a particular sort in order to understand the point Aristotle is making here *vis-à-vis* φρόνησις. For example, perhaps τέχνη is a genus of particular

nevertheless acquired in part by habituation.²¹⁰ Given these considerations, perhaps prior activity taken more generally is implied in dianoetic learning, but the examples Aristotle gives seem to describe prior activity by habituation, rather than prior activity *simpliciter*.

The worry is that, while recognizing something true about Aristotle’s account of learning, my first proposed specification of the Learning Principle misses the mark and includes too much of what is specific to the habituated mode of prior activity. In our search for a generic characterization of the Learning Principle that applies to all learned capacities, both habituated and non-habituated, why take examples from the practical and productive cases as a guide? Why ought we to suppose that we come to possess speculative knowledge by engaging in the very speculative activities towards which the knowledge under development is directed? Why think that we, for example, acquire speculative (θεωρητική) knowledge of (e.g.) elephants by speculating about (θεωρεῖν) elephants?²¹¹

3.1.5 The Incoherence Challenge to the Learning Principle

This is perhaps a fine moment to consider the incoherence challenge to the Learning Principle, since how Aristotle replies to this worry might provide some further help in specifying the Principle. In particular, as we shall see, Aristotle does not back down or weaken his insistence on the necessity of prior activity of an appropriately identical sort; rather, he qualifies the character of the agent who engages in such prior activity. The challenge runs thus: how can one become temperate by performing temperate acts *before* one has become temperate, or in general how can one develop a capacity by exercising it? How can one learn to do something by doing it, before he has learned? Aristotle raises this worry in his account of moral virtue in *Nicomachean Ethics* II.4, but it also comes up in his general account of activity and potentiality in *Metaphysics* Θ.8, as we shall see in the following section. Although the discussion in the ethical context has a distinctively ethical flavor, the

virtues, since each art may be considered its own excellent intellectual state. Perhaps, in contrast, φρόνησις is a *sui generis* virtue along with σοφία (Whiting, personal correspondence).

²¹⁰ Aristotle in *Meta.* Θ.5 offers flute-playing as an example of a capacity acquired by habituation, suggesting that at least some of the arts are acquired by habituation properly-so-called, assuming quite plausibly that flute-playing is an art. He also offers “the arts” collectively as an example of capacities acquired by learning (μαθήσει), suggesting that at least some of the arts are acquired by both modes. The details of this account will be set aside for future consideration elsewhere.

²¹¹ I use “speculative,” “theoretical,” and “contemplative” knowledge interchangeably to render θεωρητική. Similarly I use “(universally) consider,” “speculate,” and “contemplate” interchangeably to render θεωρεῖν.

very same difficulty is characterized in epistemic terms in the *Metaphysics*, generalizing to all learning including the theoretical kind. Just as prior activity applies to both moral and intellectual virtues, so too does this challenge of incoherence.

There are, however, other challenges and difficulties which are not so generic. After all, a significant part of the discussion in *Nicomachean Ethics* II.4 concerns the specific conditions of moral virtue, ones which do not apply to art or craft. Let us consider the main points of the chapter, setting aside those that concern moral virtue in particular.

[a] Someone might raise the question: what do we mean by saying that we must become just by doing just things, and temperate by doing temperate things; for if they do just and temperate things, they are already just and temperate, just as if they do grammatical and musical things, they are grammatical and musical people. **[b]** Or is it not so even in the case of the arts? It is possible to do something grammatical, either by chance or at another's instruction. So someone will be a grammatical person at that time whenever he has done something both grammatical and grammatically, and this is to do it according to the grammatical [sc. knowledge] within himself. **[c]** And yet the cases of the arts and the virtues are not the same [...]
[d] So, actions are said to be just and temperate whenever they are such as ones the just or the temperate person would do; while the just or temperate person is not the one who does these things, but the one who does them also as just and temperate people do them. It is well said, then, that the just person comes to be from doing just things and the temperate person comes to be from doing temperate things; without doing these, no one would have even a prospect of becoming good.²¹²

²¹² EN II.4 1105a17-27, b5-12, following Ross: Ἀπορήσειε δ' ἂν τις πῶς λέγομεν ὅτι δεῖ τὰ μὲν δίκαια πράττοντας δίκαιους γίνεσθαι, τὰ δὲ σώφρονα σώφρονας· εἰ γὰρ πράττουσι τὰ δίκαια καὶ σώφρονα, ἤδη εἰσὶ δίκαιοι καὶ σώφρονες, ὥσπερ εἰ τὰ γραμματικὰ καὶ τὰ μουσικά, γραμματικοὶ καὶ μουσικοί. ἢ οὐδ' ἐπὶ τῶν τεχνῶν οὕτως ἔχει; ἐνδέχεται γὰρ γραμματικόν τι ποιῆσαι καὶ ἀπὸ τύχης καὶ ἄλλου ὑποθεμένου. τότε οὖν ἔσται γραμματικός, ἐὰν καὶ γραμματικόν τι ποιήσῃ καὶ γραμματικῶς· τοῦτο δ' ἐστὶ τὸ κατὰ τὴν ἐν αὐτῷ γραμματικὴν. ἔτι οὐδ' ὁμοίον ἐστὶν ἐπὶ τε τῶν τεχνῶν καὶ τῶν ἀρετῶν· [...] τὰ μὲν οὖν πράγματα δίκαια καὶ σώφρονα λέγεται, ὅταν ἧ τοιαῦτα οἷα ἂν ὁ δίκαιος ἢ ὁ σώφρων πράξειεν· δίκαιος δὲ καὶ σώφρων ἐστὶν οὐχ ὁ ταῦτα πράττων, ἀλλὰ καὶ [ὁ] οὕτω πράττων ὡς οἱ δίκαιοι καὶ σώφρονες πράττουσιν. εἴ οὖν λέγεται ὅτι ἐκ τοῦ τὰ δίκαια πράττειν ὁ δίκαιος γίνεται καὶ ἐκ τοῦ τὰ σώφρονα ὁ σώφρων· ἐκ δὲ τοῦ μὴ πράττειν ταῦτα οὐδεὶς ἂν οὐδὲ μελλήσειε γίνεσθαι ἀγαθός. I omit the end of the chapter with some hesitation, not indeed because it is particularly relevant to my present argument, but rather because I

While I do not intend to address the peculiarities of the moral case, either presently or in the chapters to follow, it is clear that at least some of the trouble addressed in *Nicomachean Ethics* II.4 generalizes to all acquired capacities, while indeed leaving some issues distinctive to the acquisition of moral virtue alone. Accordingly, it is likely that there are in fact two sets of difficulties Aristotle addresses in *Nicomachean Ethics* II.4: one set which concerns the possibility of prior activity in general, and one set which concerns moral habituation in particular (which section of the chapter I have, for the most part, omitted in [c]). Though he addresses them here together, given the distinctively moral context of the passage, it is nevertheless possible to discern the two distinct sets of issues even there in II.4. As before, my proximate aim here is to develop an account of learning-by-doing that is both generic and generically defensible against these challenges. While I am ultimately more concerned with the applications of this framework to the intellectual case, my hope is that, once we have a handle on the possibility and intelligibility of prior activity in general, we will be better situated to solve issues that are more specific to the moral and the intellectual cases, respectively.

But for the present chapter I am setting aside the peculiar conditions of moral virtues and focusing on the coherence challenge to prior activity quite generally. Here the challenge of incoherence is generically the same, applying to both grammar and temperance alike, and therefore concerns the possibility of prior activity in general: if one learns to φ by φ -ing, how can one φ before one has learned how to φ ? If one develops a capacity to φ by φ -ing, how can one φ before the capacity to φ has developed, no matter whether φ -ing is a moral or intellectual activity? The challenge of incoherence is simple and predictable. Not much more needs to be said about the challenge itself, except perhaps that Aristotle is aware of the challenge and seems not to be particularly worried about it, with a solution ready at hand.

The key lesson in II.4 is that the student and the expert are truly doing the same things, although in different ways. Aristotle specifies the student's prior activity and the expert's perfected activity with the same adjective; what differs is their *adverbial* characterization. And he glosses this adverb in terms of the knowledge (a developed *hexis*) in the agent. While the unlearned person cannot do grammatical things *grammatically*, that is in accord with his own knowledge, Aristotle nevertheless clearly affirms that the student becomes temperate by doing temperate things and

have always found it particularly damning on a personal level, and indeed on both sides of the analogy (cf. 1105b12-18).

grammatical by doing grammatical things. What changes is how, but not whether, the student engages in the relevant activity. According to *Nicomachean Ethics* II.4, then, Aristotle does not think the expert performs a wholly new activity, but rather the same activity performed by the student, but now in a refined and deliberate way, in accord with his own knowledge rather than at another's instruction. Thus through unrefined and undeliberate activity of an appropriate sort, one's activity becomes more refined.²¹³ The unexpected and perhaps uncomfortable consequence for Aristotle's solution to the paradox, however, is that the unlearned person must also already be capable of engaging in the relevant activity, though not yet capable of doing it as the expert does. In virtue of what capacity is he already so capable?

In order to answer this question, perhaps Aristotle has in mind subtle distinctions that are only implicit in the above passages. I turn to those distinctions later in this chapter. For now, I must address a more immediate worry: someone might still be skeptical that this solution would apply to the intellectual case and, more specifically, to theoretical knowledge. Perhaps the arts, while unlike the moral virtues, are nevertheless more like the moral virtues than either is like theoretical knowledge. So I here repeat the skeptical questions raised at the end of the previous section: why ought we to suppose that we come to possess speculative knowledge by engaging in the very speculative activities towards which the knowledge under development is directed? Why think that we, for example, acquire speculative knowledge of elephants by speculating about elephants?

3.1.6 The Learning Principle in *Metaphysics* Θ.8

In reply to the questions of the previous two sections I now turn to two passages a little later in *Metaphysics* Θ, in chapter eight, in which Aristotle provides several different arguments for the priority of activity (ἐνέργεια) to potentiality (δύναμις).²¹⁴ After giving an argument that activity is in one sense temporally prior and in another sense temporally posterior to potentiality, he goes on a bit of a digression considering our very topic of learning-by-doing. Much of the passage concerns the

²¹³ Christopher Taylor suggests a similar view. He offers it, however, as a fix for Aristotle's lack of nuance, being skeptical that he adequately solves the problem. See *Nicomachean Ethics: Books II-IV* (Oxford: Clarendon Press, 2006), 61-63, 81-96.

²¹⁴ I choose to translate ἐνέργεια as "activity" rather than "actuality" since this, in my view, more appropriately captures the meaning of the term in our passages, at any rate. More thorough treatment of this proposal has been offered recently by Kosman (2013) and Marmodoro (2014).

usual incoherence challenge to his Learning Principle. Before introducing this challenge, however, he describes the Principle in much the same way as we have seen in the *Ethics*:

[a] For something existing in activity always comes to be from something existing in potentiality by the agency of something actively existing; for example, a man comes to be from a man, a musical man comes to be from a musical man, and always from some first mover; and the mover is already in activity. [b] And it has been said in the discourse on being that everything that comes into being comes to be something from something by the agency of something, and this last thing is the same in form. [c] For this reason, too, it seems to be impossible for one who has never built houses at all to be a house builder, or for one who has never played the lyre at all to be a lyre-player: for one who is learning to play the lyre learns to play the lyre by playing the lyre, and likewise also other kinds of student. [d] From this arises the sophistical quibble that someone not having knowledge will do that towards which the knowledge is directed, for the one learning does not have it. [e] But on account of the fact that *something* of the thing coming to be has come to be, and in general *something* of the thing being moved has been moved (and this is clear in the treatises on motion), perhaps it is also necessary that the one learning have *something* of the knowledge. [f] But also, then, in this case, at any rate, it is clear that the activity is even thus prior to potentiality according to generation and time.²¹⁵

Both examples here are of craft, which were indeed mentioned in the relevant ethical passages. With this in mind, these examples alone provide no new evidence for the case of speculative knowledge. However, in raising the skeptical challenge to this Learning Principle, and in giving his brief solution, Aristotle speaks of this Principle in slightly different terms.

²¹⁵ *Meta.* Θ.8 1049b24-50a3: ἀει γὰρ ἐκ τοῦ δυνάμει ὄντος γίγνεται τὸ ἐνεργείᾳ ὄντος, οἷον ἄνθρωπος ἐξ ἀνθρώπου, μουσικὸς ὑπὸ μουσικοῦ, ἀει κινουντός τινος πρώτου· τὸ δὲ κινουὺν ἐνεργείᾳ ἤδη ἔστιν. εἴρηται δὲ ἐν τοῖς περὶ τῆς οὐσίας λόγοις ὅτι πᾶν τὸ γιγνόμενον γίγνεται ἐκ τινος τι καὶ ὑπὸ τινος, καὶ τοῦτο τῷ εἶδει τὸ αὐτό. διὸ καὶ δοκεῖ ἀδύνατον εἶναι οἰκοδόμον εἶναι μὴ οἰκοδομήσαντα μηθὲν ἢ καθαριστὴν μηθὲν καθαρίσαντα· ὁ γὰρ μαθάνων καθαρίζειν καθαρίζων μαθάνει καθαρίζειν, ὁμοίως δὲ καὶ οἱ ἄλλοι. ὅθεν ὁ σοφιστικὸς ἔλεγχος ἐγένετο ὅτι οὐκ ἔχων τις τὴν ἐπιστήμην ποιήσει οὐδ' ἢ ἐπιστήμη· ὁ γὰρ μαθάνων οὐκ ἔχει. ἀλλὰ διὰ τὸ τοῦ γιγνομένου γεγενῆσθαι τι καὶ τοῦ ὅλως κινουμένου κεκινήσθαι τι (δῆλον δ' ἐν τοῖς περὶ κινήσεως τοῦτο) καὶ τὸν μαθάνοντα ἀνάγκη ἔχειν τι τῆς ἐπιστήμης ἴσως. ἀλλ' οὐδ' ἐν ταύτῃ γε δῆλον ὅτι ἡ ἐνέργεια καὶ οὕτω προτέρα τῆς δυνάμεως κατὰ γένεσιν καὶ χρόνον.

Note first that he begins by speaking of the Learning Principle in the same way as in the *Ethics*, so that not only is prior activity involved in some generic way, but we learn by doing those very things which we are learning how to do.²¹⁶ Indeed, here he does not signal the sameness of these activities with the same adjective as he did before—“doing grammatical things”—but rather with the same verb. It is hard to overemphasize Aristotle’s insistence on this point in the above passage, since the Greek is even stronger than my English translation: “for one who is learning to play the lyre learns to play the lyre by playing the lyre” (ὁ γὰρ μανθάνων κιθαρίζειν κιθαρίζων μανθάνει κιθαρίζειν).

Furthermore, in this context he also speaks of what is being learned in *epistemic* terms, suggesting that this way of characterizing the prior activity may not hold to the process of habituation only, but rather to all acquired *hexeis*, those that arise by habituation and by *logos*. Indeed, even previously in *Nicomachean Ethics* II.4 he speaks of the expert doing grammatical things grammatically, where this is glossed as “that which is in accord with the grammatical [sc. knowledge] within himself” (ὁ κατὰ τὴν ἐν αὐτῷ γραμματικὴν). Here, however, the epistemic language is explicit.²¹⁷ Nevertheless, given Aristotle’s habit of using this term (ἐπιστήμη) in stricter and more relaxed senses, this is so far insufficient evidence for the stronger claim for which I have been advocating. In the light of this passage, it is clearly open to us to think of non-habituated speculative knowledge being acquired similarly by prior activity (e.g. ὁ γὰρ μανθάνων θεωρεῖν θεωρῶν μανθάνει θεωρεῖν), but we are left seeking a stronger confirmation of the view.

²¹⁶ Cf. *EN* II.1 1103a32-33.

²¹⁷ Though, to be sure, the solution differs slightly from the solution given in *EN* II.4. While there Aristotle concedes that the unlearned person does not have any knowledge, and so is incapable of doing grammatical things grammatically, here he suggests that as soon as the learning process has begun *something* of the grammatical knowledge under development must have already come to be. Importantly here he is speaking of something which is already *in via*, and the context of the argument in *Phys.* VI to which he refers requires this. If something is already in the process of moving, changing, or coming to be, something of that process must have already been completed. If this were not the case, we cannot rightly say that the process has yet begun. How does this account “perhaps” apply to the case of learning? Aristotle suggests that if someone is undergoing the process of learning, perhaps one must already have come to possess something of the knowledge one is presently learning. On this point see *APo.* B.8 93a21-24. This point is supposed to help defuse the worry about the dependence of learning on prior activity. So just as something undergoing a change must already possess something of the form to be acquired, so someone undergoing the process of learning must already possess something of the knowledge under development. Makin (2006) discusses the differences at 189-190.

And indeed, in the passage immediately following, Aristotle gives a different argument for the priority of activity to potentiality that provides further evidence for my claim. Here he focuses on the teleological priority of activity, showing that the purpose or proper function of a capacity is prior in some sense to the inactive possession of the same capacity. But he must make a series of qualifications because of the difficult case of learning-by-doing:

[g] Yet indeed activity is prior to potentiality also in being, at any rate, in the first place because the things which are posterior in order of generation are prior in form and in being (for instance, a man is prior to a boy and a human being is prior to seed: for the one already has the form and the other not [yet]), [h] and because everything that comes to be advances toward a principle, that is, toward an end (for the that-for-the-sake-of-which is a principle, and coming-to-be is for the sake of the end), [i] the activity is an end and the potentiality is acquired for the sake of this: for the animals do not see so that they may have sight, but they have sight in order to see. And similarly also they have the art of house building so that they may build houses, and speculative knowledge so that they may speculate; but they do not speculate so that they may have speculative knowledge, [j] **unless they are studying (εἰ μὴ οἱ μελετῶντες)**; but these do not speculate, except in this very way (οὐχὶ θεωροῦσιν ἄλλ' ἢ ὧδί) or about something they have no need to speculate.²¹⁸

This is of course a very difficult passage, one which ought to be given a treatment of its own regarding its specific implications for the intellectual case.²¹⁹ However, for our present more generic purposes, this passage makes clear that those who are contemplating in order to have theoretical knowledge (θεωροῦσιν ἵνα θεωρητικὴν ἔχωσιν) might be thought to be an exception to Aristotle's

²¹⁸ *Meta.* Θ.8 1050a4-14, my emphasis added: Ἀλλὰ μὴν καὶ οὐσία γε, πρῶτον μὲν ὅτι τὰ τῆ γενέσει ὕστερα τῶ εἶδει καὶ τῆ οὐσία πρότερα (οἷον ἀνὴρ παιδὸς καὶ ἄνθρωπος σπέρματος· τὸ μὲν γὰρ ἤδη ἔχει τὸ εἶδος τὸ δ' οὐ), καὶ ὅτι ἅπαν ἐπ' ἀρχὴν βαδίζει τὸ γιγνόμενον καὶ τέλος (ἀρχὴ γὰρ τὸ οὐ ἔνεκα, τοῦ τέλους δὲ ἔνεκα ἢ γένεσις), τέλος δ' ἢ ἐνέργεια, καὶ τούτου χάριν ἢ δύναμις λαμβάνεται. οὐ γὰρ ἵνα ὄψιν ἔχωσιν ὁρῶσι τὰ ζῶα ἀλλ' ὅπως ὁρῶσιν ὄψιν ἔχουσιν, ὁμοίως δὲ καὶ οἰκοδομικὴν ἵνα οἰκοδομῶσι καὶ τὴν θεωρητικὴν ἵνα θεωρῶσιν· ἀλλ' οὐ θεωροῦσιν ἵνα θεωρητικὴν ἔχωσιν, **εἰ μὴ οἱ μελετῶντες**· οὗτοι δὲ οὐχὶ θεωροῦσιν ἀλλ' ἢ ὧδί, ἢ ὅτι οὐδὲν δέονται θεωρεῖν. I see no need to excise ἢ ὅτι οὐδὲν δέονται θεωρεῖν with Diels; though it is a difficult line, I think a reading can be given that makes sense of his choice of verb.

²¹⁹ I shall return to some of these issues in the following chapter, titled fittingly enough "Contemplating in Order to Learn."

teleological argument here, hence the parenthetical qualification. Much of our present inquiry turns on an interpretation of these lines.

His argument proceeds in the following way:

- (i) That which is later in generation is prior in form and in being to what comes earlier.
- (ii) Everything advances toward an end, which is later in generation.
- (iii) Potentiality (δύναμις) is directed toward activity (ἐνέργεια) as its end.
- (iv) So, activity is later in generation than potentiality (ii, iii).
- (v) So, activity is prior in form and in being to potentiality (i, iv).

Aristotle thus argues for the idea that *dynamis* must be teleologically directed to *energeia* as its end and, given those prior assumptions, that *energeia* must therefore be ontologically prior to *dynamis*.²²⁰ This is the core premise that he must substantiate, (iii) above, that *dynamis* is teleologically directed toward *energeia* because *energeia* is that for the sake of which its respective *dynamis* is acquired, developed, or possessed in the first place. He gives three examples to make this plain: vision, which is a natural capacity; the building art, which is an acquired productive capacity; and speculative knowledge (θεωρητική), which is an acquired capacity of a different sort. The argument concludes that the possession of these several capacities is directed toward their respective use, rather than the other way around. In this way, (iv) is substantiated and the argument goes through easily from there (if only implicitly in the text).

But given that he had just cited cases of learning-by-doing earlier in the same chapter, indeed in lines immediately preceding this passage, Aristotle anticipates the obvious objection: what about those who are building houses or contemplating *precisely in order to learn*? In reply he gives two qualifications to this argument in rapid succession: first, he allows that those who are studying and learning are, in some sense, engaging in the relevant activity for the sake of acquisition. But he immediately qualifies this qualification: those who are studying are only contemplating in a way (ὥδι) and not in the fullest sense. Here he cannot simply mean those who are practicing what they have already learned: the context of the passage makes clear that the *getting* of knowledge is at issue.

²²⁰ I am suspicious that this line may, in fact, be one of Aristotle's jokes: καὶ ὅτι ἅπαν ἐπ' ἀρχὴν βαδίζει τὸ γινόμενον καὶ τέλος. Whether one translates the second καὶ as exegetical or not, the line has a curious feel, due to the juxtaposition of ἀρχή and τέλος, which is related to the striking idea that *energeia* must be *prior* to *dynamis* because it is the *end* toward which *dynamis* is directed. Allan Gotthelf first suggested to me that Aristotle may have made jokes of this kind; it seems to me this joke, in particular, is well suited to Gotthelf's own more substantive philosophical interests.

These two qualifications, in my view, say quite a bit about the place of prior intellectual activity in Aristotle’s account. The student’s prior contemplative activity constitutes a pressing enough objection that he mentions the case at all, confirming the view I have been urging. Those who are engaged in theoretical or speculative learning are in some significant sense contemplating that they might acquire and possess theoretical knowledge. But he immediately rejects the force of this objection for his present teleological argument, denying that this prior activity is properly an end. If those who are learning cannot be said to be engaged in theoretical activity at all, then Aristotle would not have needed to make this series of qualifications. His purpose in denying that they are contemplating, then, is to deny that their activity is perfected or complete. Given these two, as it were, equal and opposite qualifications, we must posit some space for prior activity which is not properly an end in itself, but is rather directed toward the development of some capacity or state of a capacity.²²¹

And yet this is precisely what we should expect if all *hexeis*, both moral and intellectual, are developed by somehow engaging in the very same activity toward which the hexis under development is directed. If the expert’s noetic grasp of the essence of elephants allows him to intellectually consider the essence of elephants, then the Learning Principle would suggest that students come to have that knowledge of elephants by contemplating or intellectually considering elephants. If an expert’s epistemic grasp of some geometric proof allows him to deduce some conclusion regarding triangles, then this version of the Principle would suggest that students come

²²¹ One potential difficulty is the precise meaning of *μελετάω* here. It typically means “to study” or “to practice.” In Aristotle it seems to bear a range of meaning that is not exclusively tied to practice, though this is included under it. He speaks in the *Prot.* at 52.48 of those “who have studied the causes and accounts [of the heavenly bodies] (οἱ μὲν τὰς αἰτίας καὶ τοὺς λόγους μεμελετηκότες),” clearly indicating a speculative sense. Another *Fr.* 611.70 speaks of the Spartans who, from childhood, practice being short in speech (*βραχυλογεῖν*). He uses the term somewhat generally at *Rhet.* III.10 1411b11-2, citing the saying “in every respect, practicing small mindedness” as an example of metaphor, “for to practice something is to increase it.” While the saying in question speaks of practicing *φρονεῖν*, the principle cited in explaining the metaphor is quite general. Furthermore, he uses the verb to give an example in a thoroughly ethical context in *EN* III.5 1114a8 which implies habituation, arguing that the moral virtues and vices come to be by doing the activities associated with them. *Pol.* VII.14 1333b39 speaks of practicing military exercises and VIII.6 1341b17 speaks of an audience’s effects on those practicing musical arts (*τοὺς τεχνίτας...μελετῶντας*). We can conclude, then, that while Aristotle does not use the verb often, he uses it broadly to include ethical, technical, practical and theoretical cases. Nevertheless, Ross’ rendering “learning by practice” in our passage from *Meta.* Θ.8 seems to be an over-translation, especially given the explicitly theoretical context here.

to have demonstrative knowledge of some feature of triangles by performing demonstrations concerning that very feature of triangles. And yet the prior activities cited in these cases of learning are not ends in themselves but rather an intellectual activity that is performed for the sake of getting knowledge and not yet for the pure motive of contemplation *as such*. This is perhaps what Aristotle means when he says that students do not consider intellectually things that they need to consider; they have no independent reason to engage in this intellectual activity, which presumably the expert has.

I therefore admit that the student and the expert must differ *somehow* in their respective activities, or rather *ways* of engaging in the same activity. Perhaps we have arrived at a preliminary way of spelling out this distinction: our account must distinguish between the prior activity which is performed for the sake of developing a capacity, and the perfected activity of the expert which is the fulfillment and end of the developed capacity.²²² More indeed must be said about this place-holder “somehow.” But as for the characterization of the Learning Principle “those things that we must learn how to do, we learn by doing them,” we may associate it not simply with moral or productive habituation, but also with *hexeis* developing by *logos*, like the arts and scientific knowledge. In some important sense, then, we not only come to be temperate by doing temperate things, lyre-players by playing the lyre, and grammatical by doing grammatical things, but we also indeed come to be knowledgeable about elephants by contemplating elephants.

3.1.7 Summary and Conclusions

Let’s take stock so far. In the first sections of this chapter I have argued that we must understand Aristotle’s Learning Principle—that we learn by doing—as having a broader application than just the moral or ethical case. Accordingly, I have suggested that describing this principle as emphasizing “learning through habituation” or “learning by practice” obscures an important feature of Aristotle’s account. While it is true for him that we can learn by practice or habituation (ἔθει), we can also learn by a rational account (λόγω). In both cases, Aristotle is quite clear, the learner must engage in some prior activity (προενεργεῖν or ἐνεργεῖν πρότερον). And yet most commentators use the phrase “learning through practice” to pick out precisely this feature, the need for prior activity. This has led,

²²² My idea, then, is that just as there is a fulfillment or actuality (ἐντελέχεια) which is not an activity (ἐνέργεια), so there is an activity which is not perfected as a fulfillment or actuality. This will be developed more precisely in the next section.

in my view, to an under-appreciation for the role of prior activity in both kinds of learning, both ethical and dianoetic, thereby conflating the difficulty of prior activity in general with the difficulties peculiar to moral or ethical formation (e.g. concerning right motivation, choice, pleasure and pain, etc.). On the other hand, even those who recognize the importance of prior activity for intellectual development often use the language of “intellectual habituation,” which risks a similar entanglement with the peculiarities of moral formation. Interpreters have been right to worry about characterizing theoretical learning in terms of habituation, since such learning proceeds by *logos*. But in the face of this, we should not deny prior intellectual activity, but rather intellectual *habituation*.

In contrast, I have argued that we should understand habituation to be one distinctive mode of prior activity involved in moral formation, with *logos* being another such mode of prior activity involved in intellectual formation. This makes sense of the datives specifying two kinds of capacities by their two modes of acquisition in *Metaphysics* Θ.5 (τῶν δὲ ἔθει [...], τῶν δὲ μαθήσει at 1047b32-3 and ὄσαι ἔθει καὶ λόγῳ at 1047b35), both of which similarly involve *proenergeia*. There will be peculiarities to each case, but we can begin with similarities first, especially when the challenge of incoherence concerns what is common to both (i.e. prior activity). In the light of these remarks and others from Θ.8, I have described Aristotle’s Learning Principle in the following abstract and generic terms to apply to all cases of learning:

Learning Principle: If φ -ing is something we learn to do, we learn to φ by actively φ -ing.

It is therefore by actively engaging in the very activity toward which the capacity under development is directed that the student develops a capacity. Accordingly, I follow Aristotle in specifying these two activities with the same verb, and indeed insisting on this: the activity of the student and that of the expert must be the same activity at some non-trivial level of description.

So far, however, I have simply widened the scope of the classical incoherence challenge to this Learning Principle: it is the very notion of prior activity which is the sticking point. After my intervention, this challenge now threatens all kinds of learning, both moral and intellectual. One may still rightly ask: how can one learn to φ by φ -ing, before one has learned to φ ? Although we have made note of Aristotle’s replies to this worry, I have suggested that his solution simply raises a further question: if the student is already *somehow* engaged in the same activity as the expert, in virtue of what capacity is the student already so capable? I have suggested that he must have in mind subtle distinctions regarding capability and capacity more generally.

And here it is helpful to recall that my approach in this chapter is oblique and dual-faceted: I have proposed, in the first place, that this abstract and preliminary specification of the Learning Principle will help us to develop a more subtle interpretation of the so-called Triple Scheme of *dynamis*, *hexis*, and *energeia* and, in the second place, that this revised and corrected version of the Triple Scheme will help us in turn to defend the coherence of the Learning Principle with which we began. So it is to the Triple Scheme of *de Anima* II.5, with its distinctions regarding potentiality and actuality—or better, capacity and *teleological fulfillment* (περὶ δυνάμεως καὶ ἐντελεχείας)—that my argument now turns.

3.2 THE TRIPLE SCHEME

The aim of this section is to revisit the distinctions in kinds of potentiality and actuality that Aristotle develops in *de Anima* II.5 with the preceding treatment of the Learning Principle in mind, an aspect of Aristotle’s thought that is not typically emphasized in the literature on the so-called Triple Scheme.²²³ Of particular interest will be the kind of *dynamis* that is often called first potentiality which Aristotle attributes to the unlearned person.

3.2.1 The Triple Scheme Introduced

“Triple Scheme” is the term used by Myles Burnyeat and others to describe Aristotle’s various distinctions between potentiality, actuality and activity found in *de Anima* II.5.²²⁴ There Aristotle presents several distinctions in preparation for his detailed account of the perceptual powers of the soul. Regarding the first distinction between two senses of potentiality, Aristotle writes:

[a] But we must also make distinctions concerning potentiality and actuality; for just now we have been speaking about them without qualification. [b] For in one way “knower” is as we might call a man a knower, because a man is of the class of

²²³ Burnyeat (2002) considers this when he introduces the Triple Scheme at 53, but then goes on immediately to minimize the role of learning-by-doing in the change occurring throughout the learning process at 54-56. He focuses on change, so that activity plays no substantive role in his account.

²²⁴ See e.g. Burnyeat (2002); Burnyeat, *Aristotle’s Divine Intellect* (2008). Heinaman (2007); Bowin, (2011); Bowin (2012).

knowers and those having knowledge, [c] and in another way, as we call someone a knower who already possesses [e.g.] grammatical knowledge. [d] Each of these is capable (δυνατός), but not in the same way (οὐ τὸν αὐτὸν τρόπον), the one because his kind and his matter is of a certain sort, the other because he can contemplate at will (βουληθεὶς δυνατὸς θεωρεῖν), unless something from without should stand in the way. [e] But the one already contemplating is actually (ἐντελεχεία) and properly knowing this A. [f] Both of the first two, then, are potential knowers, but the one [comes to be] having been altered through learning and having changed often from a contrary state, while the other [comes to be] from possessing sense²²⁵ or grammatical knowledge but not exercising it to exercising it in another way (ἄλλον τρόπον).²²⁶

Aristotle here points out that before one learns grammar one must have a certain potentiality or capacity to learn grammar. And yet even after one has learned grammar, one still remains in a state of potentiality whenever this knowledge is inactive: the fullest and most complete actuality is achieved only when actively using grammar. The second stage tends to receive more attention because it is metaphysically amphibious: in one way inactive possession of knowledge is a fulfillment of some more basic capacity to learn, while in another way it remains potential insofar as it is inactive and unused.²²⁷ So conceived, Aristotle's three-fold distinction is intuitive and helpful to articulate even the most basic claims about these sorts of capacities, regarding both their development and their exercise.

Moreover, this passage immediately reminds the reader of a distinction from *de Anima* II.1 between two kinds or aspects of actuality or fulfillment (ἐντελέχεια) in which knowledge and its use

²²⁵ Many find it necessary to read “mathematical knowledge,” *arithmētikēn* instead of *aisthēsīn*. The view I develop offers some justification for a mention of *aisthēsīn*, the reading of all the manuscripts and commentaries (except Themistius' paraphrase).

²²⁶ *de An.* II.5 417a21-b2: διαιρετέον δὲ καὶ περὶ δυνάμεως καὶ ἐντελεχείας· νῦν γὰρ ἀπλῶς ἐλέγομεν περὶ αὐτῶν· ἔστι μὲν γὰρ οὕτως ἐπιστήμῳν τι ὡς ἂν εἴποιμεν ἄνθρωπον ἐπιστήμονα ὅτι ὁ ἄνθρωπος τῶν ἐπιστημόνων καὶ ἐχόντων ἐπιστήμην· ἔστι δ' ὡς ἤδη λέγομεν ἐπιστήμονα τὸν ἔχοντα τὴν γραμματικὴν· ἐκάτερος δὲ τούτων οὐ τὸν αὐτὸν τρόπον δυνατὸς ἐστίν, ἀλλ' ὁ μὲν ὅτι τὸ γένος τοιοῦτον καὶ ἡ ὕλη, ὁ δ' ὅτι βουληθεὶς δυνατὸς θεωρεῖν, ἂν μὴ τι κωλύση τῶν ἐξωθεν· ὁ δ' ἤδη θεωρῶν, ἐντελεχεία ὣν καὶ κυρίως ἐπιστάμενος τὸδε τὸ Α. ἀμφοτέρω μὲν οὖν οἱ πρῶτοι, κατὰ δυνάμιν ἐπιστήμονες, ἀλλ' ὁ μὲν διὰ μαθήσεως ἀλλοιωθεὶς καὶ πολλάκις ἐξ ἐναντίας μεταβαλὼν ἕξωθεν, ὁ δ' ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικὴν, μὴ ἐνεργεῖν δέ, εἰς τὸ ἐνεργεῖν, ἄλλον τρόπον.

²²⁷ See also *de An.* III.4 429b5-9 and *Phys.* VIII.4 255a30-b13.

is also the example. There Aristotle is seeking a generic definition of soul and concludes that soul is more like form, which is an actuality. Twice he makes the following distinction between kinds of actuality:

[a] The matter is potentiality and the form is actuality (ἐντελέχεια), and this is said in two ways, on the one hand like knowledge and on the other hand like contemplating. [...] [b] Consequently it is necessary that the soul be a substance as the form of a natural body having life potentially. And substance is actuality. Therefore [soul is] the actuality of this sort of body. [c] But this is said in two ways, on the one hand like knowledge, and on the other hand like contemplating. [d] Thus it is clear that [the soul is actuality] like knowledge: for both sleep and wakefulness exist in virtue of soul being present, wakefulness is analogous to contemplating and sleep is analogous to having but not exercising [sc. knowledge] (τῷ ἔχειν καὶ μὴ ἐνεργεῖν). [e] But knowledge is prior in generation [sc. to the use of knowledge] in the individual case. [f] Wherefore soul is the first actuality (ἐντελέχεια ἢ πρώτη) of a natural body potentially having life.²²⁸

It is therefore tempting to interpret the two passages as describing the same distinction, and even to consider *de Anima* II.1 as one of the three *loci classici* in which Aristotle appeals to the Triple Scheme of act and potency.²²⁹ Further, it is understandable why one would identify the first sort of actuality with the second sort of potentiality, insofar as both involve having knowledge but not exercising it. Since Aristotle explicitly calls this “first actuality” (ἐντελέχεια ἢ πρώτη) one can name the other stages (e.g. first potentiality, second actuality, etc.) from this, as is commonly done.²³⁰

²²⁸ *De An.* 412a9-11, 19-28: ἀναγκαῖον ἄρα τὴν ψυχὴν οὐσίαν εἶναι ὡς εἶδος σώματος φυσικοῦ δυνάμει ζωὴν ἔχοντος. ἢ δ’ οὐσία ἐντελέχεια· τοιοῦτου ἄρα σώματος ἐντελέχεια. αὕτη δὲ λέγεται διχῶς, ἢ μὲν ὡς ἐπιστήμη, ἢ δ’ ὡς τὸ θεωρεῖν. φανερόν οὖν ὅτι ὡς ἐπιστήμη· ἐν γὰρ τῷ ὑπάρχειν τὴν ψυχὴν καὶ ὕπνος καὶ ἐγρήγορσις ἐστίν, ἀνάλογον δ’ ἢ μὲν ἐγρήγορσις τῷ θεωρεῖν, ὁ δ’ ὕπνος τῷ ἔχειν καὶ μὴ ἐνεργεῖν· προτέρα δὲ τῇ γενέσει ἐπὶ τοῦ αὐτοῦ ἢ ἐπιστήμη. διὸ ἢ ψυχὴ ἐστὶν ἐντελέχεια ἢ πρώτη σώματος φυσικοῦ δυνάμει ζωὴν ἔχοντος.

²²⁹ The third is *Phys.* VIII.4. As Burnyeat (2002) 48-51 and Bowin (2011) 152-3 n35 point out, however, II.1 gives an incomplete version of the Triple Scheme, and Burnyeat is skeptical of wheeling *Phys.* in.

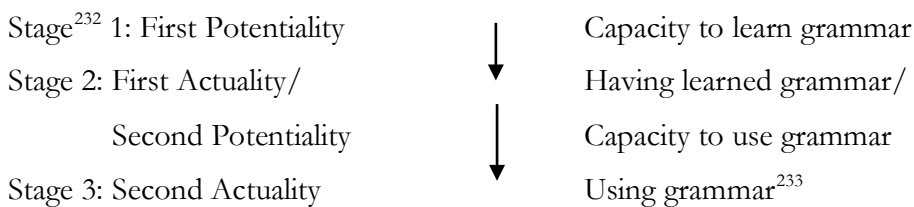
²³⁰ As Burnyeat (2002) notes at 50-1, aspects of the scheme are incompletely described and (on his view) perhaps foreshadowed in *de Anima* II.1 when Aristotle gives two senses of ἐντελέχεια.

The three stages so far described, at any rate, are uncontroversial. What is up for interpretation, however, is the precise relationship between them, especially when all three are mentioned in *de Anima* II.5. For example, does Aristotle mean for these three stages to be taken successively, so the first stage does not admit of activity at all? Or rather, does he intend to show how the two sorts of potentiality both already admit of activity but in different ways? Strictly speaking Aristotle in *de Anima* II.5 mentions two sorts of potentiality and only one sort of *entelecheia*, namely contemplative activity. Although the second stage can be conceived of as an actuality (as above in *de Anima* II.1), Aristotle does not use the term “actuality” or *entelecheia* to describe it in II.5, the passage which is our focus. So, to what extent these two passages ought to be read together, and what the precise relationship between the three stages might be, very much remains up for interpretation.

3.2.2 The Standard View of the Triple Scheme

It is clear, at any rate, why interpreting these two passages alongside each other is inviting, and in particular why one would identify the first sort of actuality discussed in II.1 with the second sort of potentiality discussed in II.5, both exemplified by the inactive possession of knowledge. Interpreting these two passages closely together produces the Standard View of the Triple Scheme:²³¹

Figure 2. The Standard View of the Triple Scheme



²³¹ In what follows, I bring several different views under a single heading. It is true that people may be committed to what I am calling the “Standard View” in varying degrees, either in strength or in explicitness, but I take it to be a sufficiently common and dominant view that the name is merited.

²³² A note about the diagram: these stages are not principally temporal, though it follows that the first stage must temporally precede the second stage. And further, on this model, one must come to possess the *hexis* at second potentiality before one can exhibit the fully developed *energeia* at second actuality. Nevertheless, these stages are not principally temporal but metaphysical, indicating stages in the life, as it were, of a capacity. Importantly, on the Standard View, the higher stage is the fulfilment or actualization of what came before, and so what comes before must have already been established before proceeding to the next stage. One question I shall raise, however, is whether it is appropriate to characterize the distinctions in II.1 and II.5 as “stages” in this way at all.

Accordingly, there are two intertwined potentiality-actuality pairs, so that stage (1) (first potentiality) is directed straightforwardly to stage (2) (first actuality), and then stage (2) (now as second potentiality) is directed straightforwardly to stage (3) (second actuality). On this view, each potentiality is directed simply and straightforwardly toward its respective actuality, taking the two potentialities from II.5 to be fulfilled, respectively, in the two actualities from II.1. The first transition is therefore a process ending in a developed capacity, while the second transition proceeds from an already developed capacity toward activity. So, these two distinct transitions are intertwined due to the convergence of first actuality and second potentiality, together constituting the second stage. The Standard View is a linear model from a capacity for development, to a developed capacity for activity, finally to its correlative activity.

As it is typically characterized, then, first potentiality is merely the capability to become actually capable, a capacity for developing some actual capacity, or a “raw potentiality.”²³⁴ First actuality, constituting the second stage, is an actual capacity in virtue of which someone is truly capable of engaging in the relevant activity. Strong proponents of the Standard View explicitly say that the original first potentiality must be developed into first actuality before it can admit of activity in any respect.²³⁵ First potentiality as such does not admit of any activity, but admits of activity only

²³³ Perhaps “saying something grammatical” or even “grammatically.” This is difficult, as will be clear.

²³⁴ See, for example, Ronald Polansky, *Aristotle’s De Anima* (Cambridge: Cambridge University Press, 2007), 232: “The unlearned person has **raw or undeveloped potentiality**, where the knowledgeable person has developed potentiality or a dispositional **capacity to do something**” (my emphasis).

²³⁵ See, for example, Pavlos Kontos, “Non-Virtuous Intellectual States in Aristotle’s Ethics,” *Oxford Studies in Ancient Philosophy* 47 (2014): 207: “Aristotle claims that every human being is potentially a knower (*epistemōn*), and that ‘man is among the knowers and those who possess knowledge’. Being a knower, however, is something that admits of different levels of realization. If we can come to know Greek, it is because we have a first potentiality which is due to our being rational creatures. **This first potentiality remains dissociated from any sort of actualization, however, as long as it does not take the form of a second potentiality (the acquired ability to speak Greek)**” (my emphasis). The upshot here is that, on Kontos’ reading, the capacity at first potentiality must acquire some further determinate form in order for it to admit of *any sort of actualization*, which I read to mean activity or *energeia*. After all, second potentiality or first actuality counts as a sort of actualization in the sense of *entelecheia*, which he surely cannot be ruling out here. So, the quote sums up nicely the kind of consensus that has formed in how first potentiality is conceived in II.5, which I am calling the Standard View, since Kontos claims this as part of a preliminary and ostensibly uncontroversial exposition.

by way of first developing into an actual capacity at the second stage.²³⁶ So on this view only a person at second potentiality is truly capable of engaging in activity. So goes the **Core Claim** of the Standard View:

Core Claim: At first potentiality, before one has perfected and developed one's capacity to φ , one is yet incapable of actively φ -ing.²³⁷

Now, to be sure, the Standard View into which this **Core Claim** fits is somewhat well-motivated. It is true that the inactive possession of a developed capacity (at first actuality) truly is the perfection and fulfillment (*ἐντελέχεια*) of the undeveloped capacity (at first potentiality). Once the student learns, it is right to say that some capacity has been actualized and perfected in him. Furthermore, it is right to say that the learned person is most fully and perfectly capable of φ -ing. The second sort of potentiality is capability at its most complete and most capable, just as the second sort of actuality (sc. refined activity issuing from that knowledge) is perfection and realization

²³⁶ See, for example, Aryeh Kosman, *The Activity of Being* (Cambridge: Harvard University Press, 2013), 57-62, especially at 57: "Humans in general have the ability to speak French in that they have the capacity to learn any language and to come to speak it. A normal infant, for example, is able to speak French in the way in which a dog or a dolphin is not able, even though in another way **she is unable to speak if she has yet to learn the language.**" And at 59: "There is therefore a sense in which our infant's ability to speak French is a double ability; it is, as it were, **the ability to be able to speak French (where to speak French refers to what we have called actively speaking French)**, as distinct from the ability of an adult French speaker, who has realized that ability and already *is* able to speak French" (my emphasis). See also Everson (1997) 91: "Even an infant can truly be said to have the capacity for literacy—**this is to say that it is capable of acquiring a knowledge of reading and writing.** This capacity, however, is a different capacity from that possessed by someone who has already acquired that knowledge since, unlike the infant, he is able to use it. **The first capacity is realized when the second capacity is acquired,** whilst the latter is realized when the knowledge is exercised." See also Wedin (1988) 44: "Children are potential knowers not in the sense that they are capable of producing actual pieces of knowledge **but only in the sense that they are capable of becoming actual producers of knowledge.** They do this by acquiring certain structures that enable them, for example, to give a geometric proof on demand."

²³⁷ A very closely related claim is that first potentiality *as such* is not proximately a capacity for the activity ultimately aimed at, but is only a capacity for development. Using the language of "passive" is difficult here, as Aristotle himself notes immediately following our II.5: on the one hand, passive capacities are things capable of being acted upon, such as something that is capable of being heated or, in general, capable of being developed. But there is another kind of passive activity such as perception or intellection, whereby some object acts on some perceptual or intellectual subject without changing the subject. While granting that all intellectual activity is passive in this sense, I nevertheless insist that learning is not passive like something being heated. But as the consensus holds it, first potentiality is not a capacity for activity, but only a capacity for passive development into such a capacity.

in its fullest degree.²³⁸ In order to understand fully Aristotle’s precise argument in II.5, however, it is not sufficient to have only these three stages in view, but also to understand the relations and transitions between them. What makes the Standard View distinctive is characterizing first potentiality itself in merely passive and developmental terms, denying that first potentiality *as such* could also and already be a capacity to actively engage in the relevant activity.

Most authors assume, in accordance with the Standard View above, that when Aristotle distinguishes the two sorts of potential knower in II.5 he also has in mind their respective actualities (ἐντελέχειαι) as discussed in II.1, and they go on to presume linear transitions between them. Because of the clear identification of these stages across the different argumentative contexts, the Standard View takes a further step and uses the context of II.1 to fix the relations and transitions between these stages as they are introduced in II.5. So, if we read these two passages closely enough together, then the first kind of potential knower in II.5 is only capable of the acquisition and possession of knowledge, being directed toward the first sort of actuality from II.1. Importantly, however, on the Standard View the first potential knower is *not* said to be capable of or directed toward intellectual activity in any respect, since (on this view) only the second potential knower is capable of doing *that*. The **Core Claim** is designed to capture this distinctive feature of the Standard View: first potentiality as such is not a capacity for activity, but only a capacity for development.

Accordingly, on the Standard View the first transition is from the potential knower in virtue of his kind and matter to his actuality as a knower who possesses but does not use his knowledge. The second transition is understood to be from the potential knower in possession of knowledge but not using it to his actually exercising the knowledge he already has. Aristotle says that the second transition is accomplished at will, thus giving us a class of second transitions in which developed capacities come to be actualized in their respective activities. The first transition, from the first grade of potential knower to the second, is said to come about “having been altered through learning and having often changed from a contrary state.”²³⁹

Authors vary in how explicitly they are committed to this view, but the vast majority begin by conceiving of first and second potentiality as substantially different sorts of potentialities, one

²³⁸ See *Meta.* Θ.3 1047a30-31: “The word ‘activity’ (ἐνέργεια), which is placed together with ‘actuality’ (ἐντελέχεια), [...]” See also *Meta.* Θ.8 1050a21-23: “For the function (ἔργον) is the end (τέλος), and the activity (ἐνέργεια) is the function, and for this reason the word ‘activity’ is said according to the function and stretches toward actuality (ἐντελέχεια).”

²³⁹ *De An.* II.5 417a32-3: διὰ μαθήσεως ἀλλοιωθεῖς καὶ πολλάκις ἐξ ἐναντίας μεταβαλὼν ἕξεως.

that is merely directed toward development and one that is directed toward activity in the proper sense. Some may allow that prior activity is involved in some cases of capacity's development, but they do not consider prior activity to be an exercise of first potentiality as such.²⁴⁰ Others explicitly deny the relevance of learning by doing to our conception of first potentiality, perhaps even seeing it as a potential problem.²⁴¹ For the most part, however, the idea of learning by doing is simply not mentioned in the context of interpreting the Triple Scheme, and so many are not explicitly committed to the **Core Claim**. But, by my lights, these authors still overemphasize the way in which first potentiality is a capacity to learn and to acquire or develop some capacity, so that by omission they lean in favor of the Standard View, only speaking of exercise or activity once someone has already learned.²⁴² My concern is that the Standard View has become so common when speaking about the distinctions Aristotle introduces in act and potency, that most risk minimizing to the point of denying his commitment to learning-by-doing, which is another essential feature of "first potentiality."

Moreover, most remain implicitly committed to the Standard View because they apply the Triple Scheme to the development of natural capacities, most commonly to the development of perceptual capacities. To see how this would commit someone to the **Core Claim**, let us recall that Aristotle in *Nicomachean Ethics* II.1 states quite clearly that knowledge and virtue develop by engaging in relevantly identical prior activity, while perception does not develop in this way. It is not by often seeing that we develop eyesight, and so whatever state precedes the development of eyesight is decidedly not yet capable of engaging in visual activity. Now, to be sure, the development of

²⁴⁰ Cf. e.g. Burnyeat (2002) and Kosman (2003).

²⁴¹ Bowin (2011) at 143 prefers to discuss those "forms of learning [that] are not achieved through practicing what is learned, but merely through absorbing it from a teacher." He goes on to grant, citing Kosman (2003), "a subject may be said to change toward a disposition *by means of* the activities that the disposition is a disposition for, as in dispositions acquired through practice." He maintains a skepticism that Aristotle saved the coherence of this idea. Nevertheless, Bowin's reading allows that these activities can contribute to the getting of dispositions; however he does not entertain the possibility that first potentiality is not only directed toward acquiring and possessing "dispositions," hence his desire to stick to cases of learning-by-absorption and to set aside cases of learning-by-doing. Besides the fact that learning-by-absorption (or by *mere* absorption) is impossible on Aristotle's view—that is, if I am right—the idea of prior activity would render the account of first transitions in Bowin (2012) even more interesting. But as things stand, he mentions learning by prior activity only with great reluctance.

²⁴² Johansen (2012) 23-24, 138-9, 158-61, 241.

knowledge and of vision are alike in some broad sense. But if first potentiality applies also to natural capacities, first potentiality *as such* need not be a capacity for engaging in prior activity.

For these more implicit adherents to the **Core Claim**, their conception of first potentiality is at issue, so that the prior activity involved in learning is merely accidental to their conception of these metaphysical distinctions. On a view of this sort, what is common to natural and learned capacities and what is essential to first potentiality is the capacity to develop *simpliciter*, and not the capacity for development specifically by prior activity. In this way, many are implicitly committed to the Core Claim of the Standard View. Whatever their differences, my opponents agree that first potentiality as such is a passive capacity for development, perhaps but not necessarily by learning. And this view is motivated in large part by reading *de Anima* II.1 and II.5 together.

3.2.3 Initial Worries about the Standard View

This assumption about Aristotle's purpose and meaning in II.5 is implicit or unargued in many authors and lies at the heart of the Standard View of the Triple Scheme: first potentiality is directed principally and proximately toward the acquisition of yet another more determinate capacity, and therefore only derivatively or remotely toward engaging in some activity. Potentiality of the first sort in II.5 is directed at actuality of the first sort in II.1, namely a settled and developed *hexis*; potentiality of the second sort in II.5 is directed at actuality of the second sort from II.1, namely *energeia*. Accordingly, the only activity that most commentators mention is the refined activity of the learned person, characterizing first potentiality simply a capacity for getting an actual capacity, a capacity for becoming truly capable. The result is that on these interpretations, first potentiality is something that can apply also to passive capacities that develop by nature rather than by prior activity.²⁴³

Even on first glance, however, subtle differences between the discussions of *de Anima* II.1 and II.5 suggest that the Standard View is oversimplified, at least in the tendency of its adherents to read these two passages closely alongside each other. First and most obviously, the distinction in II.1 is between two different sorts of actuality (ἐντελέχεια), while the distinction in II.5 mostly concerns two different sorts of potentiality (δύναμις). While it is true that Aristotle introduces this passage

²⁴³ This is not necessary, but rather an intimately related and friendly thesis to the Standard View. Since first potentiality is not conceived of as (necessarily) capable itself of any activity, it follows that undeveloped capacities which develop in a purely passive way (i.e. by nature) are included as first potentialities. Natural capacities will be discussed in a later section of the chapter.

saying that distinctions must be made between potentiality and actuality alike, he goes on to give two sorts of potentiality and only one kind of actuality (ἐντελέχεια), here identified with activity (ἐνέργεια). That is to say, what is called “first actuality” in II.1 is considered to be a second kind of potentiality here, while the only kind of actuality which is named here in II.5 was the second sort mentioned in II.1, *energeia*.

The Standard View certainly recognizes this, and accordingly builds out from Aristotle’s term “first actuality” (πρώτη ἐντελέχεια) from II.1 to give us a set of four terms, with second potentiality coinciding with first actuality. While this reading itself may have some *prima facie* plausibility, it already risks oversimplifying the different points of emphasis between the two passages, thereby prejudicing readers against other possible readings of II.5. According to a possible alternative, one which I shall go on to defend, two ways of being capable of engaging in a single activity are being distinguished in II.5. On that reading, Aristotle does not have in mind two kinds of potentialities and their *respective* actualities, but rather two kinds of being capable of engaging in a *single* activity. Among other things, such a reading would make some sense of the fact that in the context of II.5, only the last of the three knowers mentioned is said to be in actuality (ἐντελεχεία), suggesting that both potential knowers are being related and directed to a single fulfillment or perfection, namely activity. The Standard View seeks to assimilate the two chapters in a straightforward way, and as a result risks minimizing or ignoring entirely these subtle differences.

Furthermore, given what Aristotle says later in II.5 about the *disanalogies* between the development of sense and intellect, namely that one comes about through learning and teaching while the other comes about through natural generation, we might expect even the initial scheme to be sensitive to these differences.²⁴⁴ In fact, this distinction is perhaps foreshadowed in Aristotle’s description of the second sort of potential knower as someone “possessing sense or grammatical knowledge.”²⁴⁵ Many recent interpreters, however, follow Themistius’ paraphrase and emend the text to read “mathematical [knowledge]” (ἀριθμητικῆν) instead of “sense” (αἴσθησιν), for a number of reasons.²⁴⁶ The most prominent is the assumption that the entire Triple Scheme, as many understand it, is meant to apply analogously to sense and intellect alike. But against the background

²⁴⁴ Cf. *de An.* II.5 417b16-24.

²⁴⁵ *De An.* II.5 417a32-b1.

²⁴⁶ Cf. Ross’ (1961) *ad loc.* See also Burnyeat (2002) 153 n68. Philoponus, Simplicius, and Sophonius all read αἴσθησιν, along with all other manuscripts we have.

of the alternative I am urging, which has been to point out the differences between natural and acquired capacities on Aristotle's view, we might be suspicious from the start that the analogy between knowledge and perception might break down at the level of first potentiality. The rigid linear schema of the Standard View risks ruling out any possible disanalogy here, and even motivates changing the text to erase what might have been an explicit cue that Aristotle had this disanalogy in view even earlier in the exposition of these various distinctions.

Finally, most of these standard readings are not attentive to a possible distinction between actuality (ἐντελέχεια) and activity (ἐνέργεια) in Aristotle's account, especially in his usage between the two passages in view, *de Anima* II.1 and II.5. We already know that these Greek terms can come apart on the basis of the discussion in II.1: there first actuality (πρώτη ἐντελέχεια) is defined as having knowledge but not exercising it (ἔχειν καὶ μὴ ἐνεργεῖν). While it is true for both passages that both terms can describe the person who is actually engaged in activity and putting knowledge to use, these interpretations are unable to accommodate the possibility of activity being involved elsewhere in the schema. Given that an *entelecheia* is possible that is not *as such* an *energeia* (namely first actuality or πρώτη ἐντελέχεια), we should be *prima facie* suspicious of a schema which rules out the very possibility of an *energeia* which is not itself a complete or perfect *entelecheia*.

This is especially important when reading our passage, since Aristotle suggests that the second kind of potential knower goes from not exercising his knowledge to exercising it *in another way* (ὁ δ' ἐκ τοῦ ἔχειν τὴν αἴσθησιν ἢ τὴν γραμματικὴν, μὴ ἐνεργεῖν δέ, εἰς τὸ ἐνεργεῖν, ἄλλον τρόπον).²⁴⁷ Though the sentence is incomplete, most commentators supply some form of γίγνεσθαι ἐπιστήμων, and I am not opposed to this aspect of their reading, at least. The most natural way to read this line, however, is for “in another way” (ἄλλον τρόπον) to be describing the transition to activity (εἰς τὸ ἐνεργεῖν), so that the difference between the two knowers is how they transition to activity. In support of this idea is the consistent description of someone with a *hexis*, both here and elsewhere, as someone who can exercise their (e.g.) knowledge at will. The specific difference Aristotle cites is not that the second sort of potential knower can contemplate *simpliciter*, but rather *at will*.²⁴⁸ But, because the Standard View presumes a deflated sense of first potentiality from the start,

²⁴⁷ *De An.* II.5 417a32-b2.

²⁴⁸ *De An.* III.4 429b5-9. More must be said about degrees of refinement and deliberateness of activity throughout the process of development.

it has trouble reading these lines in the text in the natural way, and must argue that *allon tropou* modifies something else.²⁴⁹

At the outset it is important to note, then, that the Standard View of the Triple Scheme understands first potentiality as a mere capacity for gaining a further capacity, as a kind of “raw potentiality” which, of itself, cannot yet admit of any activity until and unless it has developed into second potentiality. This is most clearly contained in what I am calling the **Core Claim** of the Standard View, that “At first potentiality, before one has perfected and developed one’s capacity to φ , one is yet incapable of actively φ -ing.” These interpreters see activity (*ἐνέργεια*) as following from the second stage of the scheme as they understand it, but their reading denies, either implicitly or explicitly, that activity is possible elsewhere. Furthermore, even for those who allow this possibility, it is not part of how they conceive of first potentiality *as such*, considering the capacity for prior activity to be accidental to what makes first potentiality a potentiality.

As we have seen, this raises three *prima facie* worries about the Standard View as a matter of interpreting II.5: (i) it merges the discussions of II.1 and II.5, possibly losing sight of what is distinctive to the respective passages, in particular regarding what Aristotle chooses to call potentiality and actuality in each place; (ii) in doing so it treats natural and acquired capacities as both falling under the Triple Scheme in an analogous way, in particular assuming that first potentiality applies to both kinds of capacity; and (iii) in making this assumption about first potentiality (viz. that it is “mere” or “raw” potential), the Standard View has trouble accommodating parts of II.5 that suggest the difference between the two sorts of potential knower is not their respective capability or incapability of engaging in intellectual activity *simpliciter*, but rather their respective capability or incapability of intellectual activity *in a very distinctive way*, namely well or correctly, and whenever one wishes.

3.2.4 A Non-Standard Defender of the Core Claim

My opponents are, for the most part then, committed to the idea that first and second potentialities differ in that the first is a passive potentiality for being acted upon while the second is an active potentiality (at least in some respect) for acting and engaging in activity. Mary Louise Gill is

²⁴⁹ Cf. e.g. Hicks (1907) 356: “417b1 ἄλλον τρόπον. Take these words with μεταβαλὼν understood, “by another sort of change,” and not with ἐνεργεῖν.” This raises the question: by another sort of change *to what*? The answer is only given in the case of one who is exercising his knowledge.

something of a special case, since she and I both read *de Anima* II.5 as outlining two potentialities of a similar sort that are directed to the same thing in different ways. Before considering our similarities, she nevertheless is committed to the **Core Claim**, so that the capacity to act only comes at the second stage. She writes:

Aristotle describes the second potential knower as one who possesses the relevant knowledge (417a24-25); the change leading to that possession has already occurred, and consequently the subject and his goal have been successfully unified. The second subject is said to be δυνατός in the sense that, when he wishes, he is able to theorize (δυνατός θεωρεῖν) if nothing external interferes (417a27-28). Since the property acquired by means of the change is itself a capacity for some activity, the second subject has a capacity that the first subject lacks.²⁵⁰

So, on Gill's view, that which is acquired and possessed by the second potential knower is a capacity for activity, something that the first potential knower lacked. She is therefore explicitly committed to the Standard View because she straightforwardly considers first potentiality to be a *passive* potentiality, a capacity to be acted upon but not, as such, to act. She explicitly denies that a person at first potentiality is capable of theorizing or engaging in intellectual activity of any sort.

Gill's account is slightly more complex, however, meriting special mention here. For her, both potentialities are similar in that they are both potentialities for gaining and having a property or state. While second potentiality makes the second sort of knower capable of activity, this is not what second potentiality is *as such*. It just so happens that the property in question is a capacity for activity. Indeed, immediately after the above passage she goes on to explain:

Since the property acquired by means of the change is itself a capacity for some activity, the second subject has a capacity that the first subject lacks. But the issue is not his capacity for activity but his potentiality for the capacity or state that enables the activity. This potentiality is second level rather than first because, in virtue of possessing the capacity, he can exercise at will, if not prevented. The distinction between the two levels of potentiality thus turns on the actual state of the subject.²⁵¹

Gill is therefore interested in explaining how both potential knowers are examples of passive potentialities, that is, potentialities for the acquisition and possession of some property. For her it is

²⁵⁰ Mary Louise Gill, *Aristotle on Substance: The Paradox of Unity* (1991), 181.

²⁵¹ Ibid.

merely accidental to the case that the property being acquired is a capacity for an activity. Indeed, she also uses the Greek variable φ , but for her φ stands in for a property or positive state, the form that stands opposed to privation and which is the goal of a change. In my case, in contrast, the φ toward which these two potentialities are both directed is an *activity*, not a state, form, or property.

Nevertheless, her view resembles mine structurally given how we read II.5. We both emphasize that the difference between the two potential knowers is a state of a capacity that exists in a different way or at a different stage in both. We agree, in short, that both first and second potentialities are directed at the same φ . On this narrow interpretive point, I agree with her analysis, which is worth quoting at length:

The most common view of Aristotle’s distinction is that the first subject has a potentiality for the first actuality (the state of knowledge) and the second knower a potentiality for the second actuality (the activity of theorizing). Clearly, Aristotle does think that the second subject has a potentiality that the first subject lacks, since the positive character acquired by means of the change—the knowledge—is itself a capacity for an activity. Thus, the second subject can theorize because this activity is made possible by the knowledge that he has acquired. The question is whether this is the distinction at issue in II.5, and there is reason to doubt that it is. *de Anima* II.1 points out that the term “actuality” (ἐντελέχεια) is ambiguous and can apply either to knowledge (the first actuality) or to theorizing (the second actuality). Aristotle does not say that “knowledge” (ἐπιστήμη) is ambiguous, yet the standard interpretation of II.5 assumes that it is. Given Aristotle’s distinction in II.1, he could easily have said in II.5 that the first subject is a potential knower, the second a potential theorizer. Instead, he calls both subjects “potential knowers” (κατὰ δύναμιν ἐπιστήμονες). Since he distinguishes knowledge from theorizing in II.1, as two sorts of actualities, his language in II.5 is likely to be carefully chosen. If his language is precise, then both subjects should have a potentiality for the same goal—the state of knowledge—which is the first actuality. On this view, the potentialities are related to the same end, but the subjects have the potentiality in different ways (417a26)²⁵²

²⁵² Ibid. 178.

So, Gill and I read the passage in the same way in this important respect, that both potential knowers are directed toward the same thing. We diverge, however, in what we conclude as a result: I say that the capacity in both cases is active and directed at the same activity, where the variable φ stands in for some activity, namely theorizing and knowing this here A. Her conclusion, in contrast, is that the capacity in both cases is passive and directed at the acquisition, development, and possession of some property, namely the state of knowledge, so that the variable φ stands in for a property or state. And again, although she concedes that the second sort of potential knower is capable of engaging in theoretical activity, she does not take this to be the relevant “issue” or respect in which he is said to be a potential knower in this passage. This seems to turn on her understanding “to know” (ἐπίστασθαι) in an inert way for Aristotle. But, as Aristotle makes clear, the one who is “already *theorizing*” is also “actually and in the most proper sense *knowing* this here A” (ὁ δ’ ἤδη θεωρῶν, ἐντελεχεία ὄν καὶ κυρίως ἐπιστάμενος τόδε τὸ Α.).²⁵³ Furthermore, this third subject, who both theorizes and in the proper sense knows, is the only *entelecheia* mentioned in the passage. Accordingly, the difference between theorizing and knowing that Gill suggests does not seem to be operative in the passage.

But this is all perhaps a needless complication: in the end, despite her helpful interpretive work on the distinctions drawn in II.5, she concludes that the capacity for activity only exists at the second stage, and even then this active capacity is secondary to what second potentiality is as such, firmly committing her to the **Core Claim**. And although Gill is an exceptional case, most others are motivated to accept the Standard View in part by reading II.1 and II.5 together. I have so far outlined initial worries about both standard and non-standard commitments to the **Core Claim** by drawing on II.5 itself. I now go on to consider more general commitments in Aristotle which constrain our interpretation, most notably drawing from his account of learning. Accordingly, in what follows I propose an alternative reading of II.5 and of the distinctions between potentiality, actuality, and activity which are drawn from it.

²⁵³ *De An.* II.5 417a28-29.

3.3 AN ALTERNATIVE ACCOUNT

3.3.1 A Path Forward

At this stage, however, one may rightly wonder: what could these two pieces of Aristotelian doctrine, the Triple Scheme and the Learning Principle, have to do with one another? Or while that much may be obvious, how might each aid in the other's interpretation? Let us pause to consider an example. It is often said among those who hike long-distance trails that the best training for hiking up and down mountains with a heavy pack is to hike up and down mountains with a heavy pack. This advice has an Aristotelian ring to it: we come to be backpackers by backpacking.²⁵⁴ Among novices it is quite natural to ask, however, just how fit someone has to be for such a training program to be effective. Many people are not physically disposed and therefore not able to become backpackers by backpacking; this program would be too advanced for them. The proposed program will only suit those who are already able, in some non-trivial sense, to carry a heavy pack up and down mountains.

But, as we have said, specifying *in what non-trivial sense* they must already be capable of backpacking is precisely the problem of making Aristotle's Learning Principle coherent in the moral and intellectual cases. It is not simply the obvious risk of incoherence that Aristotle faces, but more precisely a dilemma in how he ought to conceive of potentiality or capability, in particular that belonging to someone before learning or discovering. If, on the one hand, Aristotle were to conceive of someone at first potentiality as so capable that he can already engage in the relevant activity, straightforwardly and without trouble, then this ability would stand in need of no further development: if this were so, the distinction between first and second potentiality would seem to collapse. Returning to our example, if the hiker can already backpack up and down mountains, then she stands in no need of this training. If, on the other hand, Aristotle were to conceive of someone at first potentiality as needing development *before* he would be capable *in any sense* of engaging in the relevant activity, then his Learning Principle cannot hold, even in the abstract and preliminary terms

²⁵⁴ For the purposes of this example I am focusing on the physical aspects of backpacking, rather than the many *technai* that one must acquire as well. Insofar as I am focusing on a bodily *hexis*, however, the example will have a limited interpretive application. On the other hand, the bodily case is clearer and more apparent to us, so following Aristotle's usual method, let us begin there, noting that there will be important disanalogies that could only be avoided by a more technical and complex example.

we have so far specified it. In short, if the hiker must become able to backpack *first*, then she cannot become a backpacker by backpacking; but if she can already backpack, then she needs no training.²⁵⁵ The incoherence objection to the Learning Principle, then, can be fruitfully understood in more precise terms as a puzzle about how to specify first potentiality and how to understand the capability that the unlearned person already has to learn.

From this it should be clear that the Triple Scheme of act and potency in the case of developed or learned capacities is helpful in considering his Learning Principle. In particular, Aristotle's specification of first potentiality as "being capable in virtue of one's kind or matter" (417a27) is very much to the point. What is presupposed here is not the presence of form in actuality but rather the capability or potentiality to receive and develop some form in actuality. The debate might be characterized in the following way: what potentiality must the matter already possess in order to develop the relevant form in actuality through prior activity? Or alternatively, what is the nature of the positive state or *hexis* which comes to be in actuality by prior activity?

This chapter, then, aims to accomplish more than simply resolving an apparent tension between the Learning Principle and common conceptions of first potentiality. Although my argument will, in the following sections, be structured around resolving this tension, I want to emphasize that something deeper is motivating my project. I take it that Aristotle developed the concept of first potentiality precisely to explain the peculiar capability that the unlearned person has to learn, which is to learn *by doing the very thing he is learning to do*. So although resolving this tension between the Standard View of the Triple Scheme and Aristotle's account of learning serves as a motivating occasion or starting point for my analysis, I conclude that these two bits of Aristotelian philosophy are connected at a deep level.

3.3.2 Examining the Learning Principle: Scylla and Charybdis

We have seen that two claims commonly attributed to Aristotle are in tension. Recall:

Learning Principle: If φ -ing is something we learn to do, we learn to φ by actively φ -ing.

Core Claim: At first potentiality, before one has perfected and developed one's capacity to φ , one is yet incapable of actively φ -ing.

²⁵⁵ I note again the clear parallels to Meno's paradox.

To avoid attributing an outright contradiction to Aristotle, at least one claim must be weakened or abandoned entirely. Let us begin with the **Learning Principle**. There are two opposing errors when interpreting Aristotle's account of learning. The first and more obvious error, which most interpreters successfully flee, is attributing outright incoherence to him: the student's prior activity cannot be an exercise of the very knowledge or art or virtue that he is acquiring. To avoid this, however, some go so far as to deny any meaningful identity at all between the student's and the expert's activities.²⁵⁶

But perhaps the apprentice, strictly speaking, does not learn to build houses *by building houses* because, after all, only the master can do *that*. Rather, on one approach, the apprentice learns to build houses by doing more basic activities, such as laying bricks and driving nails. A similar story can be told for learning to swim, read, or play the piano: in each case, on this view, the student learns not by doing the unified activities themselves (e.g. house-building), but rather by doing more basic activities (e.g. laying bricks). A second strategy accepts that the prior activity is unified, but denies that it is the student's own activity. The apprentice is capable of building houses only in an insignificant way, since it is done "by chance or at the prompting of another."²⁵⁷ Accordingly, on this view, no active capacity on the part of the student is necessary because his activity is, after all, not up to him.

An advantage of these approaches is that the charge of incoherence cannot even arise against them. Incoherence is a risk only when insisting that the student and the expert are both (e.g.) building houses. However appealing either approach may be, neither seems to be Aristotle's, and they therefore constitute a second opposing interpretive error. Instead, Aristotle insists almost without qualification that the activity of someone learning to φ is the same activity as someone who

²⁵⁶ For example: perhaps the student's grammatical activity is only *homonymously* so-called, since he lacks the relevant knowledge. However, this is not how Aristotle chooses to describe things (cf. *EN* II.4 1105a5-12). Wherever something is only homonymously so-called (e.g. a non-functioning axe at *de An.* II.1 412b11-15), Aristotle explicitly flags this. For another possible complication and my reply to it, see the earlier discussion of "contemplating in order to learn" from *Meta.* Θ .8 above.

²⁵⁷ *EN* II.4 1105a23. See for example Stephen Makin's commentary on the *Meta.*: "In [*Nicomachean Ethics*] 2.4 Aristotle responds to the charge of paradox. Since there can be instances of φ -ing which are not exercises of the capacity to φ , someone could play the piano without possessing the capacity to play the piano: for example, playing a tune under instruction, without being able to repeat it at will" (2006, 99). This does not seem to be Aristotle's reply in that passage, however. Given that the student must himself play the piano in order to learn, he must already possess the capacity to play the piano. What he lacks is the capacity to play the piano *as the master pianist does*, deliberately and in a refined way.

has already learned. As we have seen, he chooses to describe these two activities in the same way, characterizing the difference between them with an adverb. Moreover, Aristotle glosses the adverb “grammatically” as “in accord with the grammatical knowledge within himself,”²⁵⁸ confirming the thought that the adverb does not mark a difference in the things done but in the agents doing them. The student must have the capacity already because the adverb (and his teacher) modifies and shapes the activity he is already engaged in. So, on the first approach, while I doubt that Aristotle would avoid or oppose describing the student’s activity in more basic terms (e.g. apprentice house-builders learn by laying bricks), there is nevertheless a preponderance of textual evidence suggesting that he would not deny the more unified description either, that they are, indeed, building houses.²⁵⁹

As for the second approach, where the prior activity is not truly the student’s own, it is true that for Aristotle there are some changes that are accomplished by an agent with no activity on the part of the patient, such as heating and being heated. In these cases he says that the patient is capable of undergoing a change, but not itself capable of actively engaging in the activity.²⁶⁰ Indeed, Aristotle considers such passive capacities in one of the key discussions of learning. But there, recall that passive capacities are opposed to ones that are learned and developed by prior activity:

[b] on the one hand it is necessary that we possess those [coming to be] by habituation and by *logos* having previously exercised them, [c] on the other hand it is

²⁵⁸ EN II.4 1105a25.

²⁵⁹ It occurs to me that at any given moment someone may not be doing the full and unified activity, indeed in some sense this could be said even about the expert. I am presuming in some broad sense a view of action broadly inspired by Michael Thompson’s Naïve Action Theory in *Life and Action* (2008), so that what one is on about can be specified in unified terms even if one is only performing some small piece of the activity. After all, at no single moment can one travelling from Pittsburgh to Washington DC be said to be moving from Pittsburgh to Washington DC.

²⁶⁰ Even the capacity (*dynamis*) to be-acted-upon (*paschein*) is a capacity for a sort of activity (*energeia*). Aristotle distinguishes agents that act (*poiein*) and patients that are-acted-upon (*paschein*) in virtue of active or passive capacities (e.g. capacities to heat and to be heated). Furthermore, both agents and patients admit of capacity (*dynamis*) and activity (*energeia*) (on the agent’s side, X can heat Y versus X is now heating Y; on the patient’s side, Y can be heated by X versus Y is now being heated by X). Although intuitive, we lack unambiguous terms in English to describe e.g. the “passive activity” of something now being heated. “Capable” is correlative with “active,” but “active” is not here meant as correlative with “passive.” There is a further difficulty here since, for both perception and intellection, the activity toward which the capacities are directed is a passive capacity in which some object acts on the subject, whether perceptual or intellectual. I therefore speak in terms of “passive development,” to screen off this complication which is, to be sure, relevant to Aristotle’s purpose in *de An.* II.5.

not necessary [for] those [capacities] not of this sort, i.e. those which involve being-acted-upon.²⁶¹

Thus, passivity and being-acted-upon are marks of capacities that do not develop by prior activity. While the natural development of passive capacities may be like putting sight into blind eyes, Aristotle follows Plato in not describing learning in this way.²⁶² And although there may be some respects in which even learning is a passive process, under the guidance of a teacher or by chance,²⁶³ Aristotle is clear that it is not *merely* passive.²⁶⁴ The student must be an active participant in whatever change he is undergoing through learning: no matter how strong the teacher or how good the luck, someone who has never done temperate things or built any houses has no hope of becoming a house-builder or temperate.²⁶⁵ We must therefore avoid characterizing learning straightforwardly as a passive change in the student, but rather as a change throughout which the student himself must also be active. Therefore, I take it to be uncontroversial that Aristotle, at any rate, is committed to the **Learning Principle** in the way I have described, so that the student and the expert must be engaged in the same activity in some significant way. So, denying this would be an error when interpreting Aristotle.²⁶⁶

²⁶¹ *Meta.* Θ.5 1047b31-35: τὰς μὲν ἀνάγκη προενεργήσαντας ἔχειν, ὅσαι ἔθει καὶ λόγῳ, τὰς δὲ μὴ τοιαύτας καὶ τὰς ἐπὶ τοῦ πάσχειν οὐκ ἀνάγκη.

²⁶² See *Rep.* VII 518b7ff. quoted at the start of this chapter. See also Thrasymachus' threat at *Rep.* I 345b3ff: "What then shall I do? Shall I bring forth the *logos* and insert it into your soul?" To which Socrates replies, "God forbid!"

²⁶³ See *Phys.* III.3 202a31-b22. Learning can be described in passive terms; the error is describing it in *merely* passive terms.

²⁶⁴ See *de An.* II.5 417b12-16: "The [change] from being potentially learned and possessed of knowledge under the agency of one actually [learned] and capable of teaching either ought not to be called a being-acted-upon (*paschein*), just as we said, or there are two ways of alteration: the change toward privative dispositions and the change toward states and nature." τὸ δ' ἐκ δυνάμει ὄντος μανθάνον καὶ λαμβάνον ἐπιστήμην ὑπὸ τοῦ ἐντελεχείᾳ ὄντος καὶ διδασκαλικοῦ ἦτοι οὐδὲ πάσχειν φατέον, ὥσπερ εἴρηται, ἢ δύο τρόπους εἶναι ἀλ- λοιώσεως, τὴν τε ἐπὶ τὰς στερητικὰς διαθέσεις μεταβολὴν καὶ τὴν ἐπὶ τὰς ἕξεις καὶ τὴν φύσιν.

²⁶⁵ "Having been altered through learning" (διὰ μαθήσεως ἀλλοιωθεὶς καὶ πολλάκις ἐξ ἐναντίας μεταβαλὼν ἕξεως) at *de An.* II.5 417a31f allows that the student is actively engaged in being altered.

²⁶⁶ But why is denying the Learning Principle a pitfall that we must avoid in general, or rather, why is Aristotle *right* to insist that we come to be house builders *by building houses ourselves*? I cannot offer a proper philosophical defense of Aristotle's Learning Principle in this chapter, but here is a brief suggestion: perhaps becoming capable of the expert's unified activity can only be effected by engaging in unified activity from the start. The student on his way to being a master builder must

For the purposes of interpreting Aristotle, then, we must avoid these two opposing errors: learning cannot involve the prior exercise of the very knowledge or art or virtue that is aimed at, but we must not deny outright that the student's prior activity is appropriately identical to the activity of the expert. Accordingly, an interpretation that avoids both errors is attractive, showing how Aristotle's account of learning escapes incoherence without having him deny the very things he insists upon.

3.3.3 Examining the Core Claim: Toward an Amended View

If we affirm the possibility of learning by doing in the precise way that the **Learning Principle** requires, by emphasizing the appropriate identity between the prior and perfected activities of the student and the expert, we must turn our attention to the **Core Claim** and the Standard View that it motivates. The question that causes trouble for the **Core Claim** of the Standard View is the following: in virtue of what capacity is the student already capable of doing the very things he is learning to do? Returning to the grammar student, if he is himself already doing grammatical things, though not yet grammatically, then he must already have a capacity for doing grammatical things, at least. This is especially true since, for Aristotle, capacities are attributed in view of someone exhibiting the activities issuing from them, an indispensable commitment in his metaphysical account.²⁶⁷

Moreover, for Aristotle, knowledge and art and virtue are not capacities (*δυνάμεις*) without qualification, but rather states (*ἔξεις*) or perhaps, if you will, states *of capacities*.²⁶⁸ So, from the standpoint of capacities, what is acquired by learning is not a wholly new capacity but rather a new state of a capacity that one already possessed. Perhaps we can say that the capacity itself develops into the *hexis*, so that one does not possess a raw capacity with some development tacked on, but rather the capacity itself develops and comes to be (e.g.) knowledge. Similarly, with respect to the **Learning Principle**, an important point has been that Aristotle describes the activity of the student

already be aiming at the unified activity of house building, even if only exhibiting this unity in a rough and unrefined way. In contrast, the person who is simply laying bricks but not aiming at house building will never become a master builder; no amount of unintegrated or more basic prior activity in learning will produce the unified activity of the expert.

²⁶⁷ See, for example, *de An.* I.1 402b9-14.

²⁶⁸ See, for example, *EN* II.5 and VI.1-6 *passim*.

and of the expert with the same adjective or verb, but with different adverbs: learning does not produce a wholly new activity, but rather the same activity now performed in a new way. Indeed, we should recognize an intimate connection between these two points of clarification in Aristotle's account, so that with the new adverbial specification of the expert's activity he is describing the new state from which the refined activity now proceeds. Indeed he says just this in *Nicomachean Ethics* II.4, glossing "grammatically" as "according to the grammatical knowledge within himself." Knowledge and virtue understood as "developed capacities" refers to a capacity that has now achieved a developed state, and not to a wholly new capacity that has come into existence after a process of development.

So, I am suggesting that, for Aristotle, capacities in an undeveloped state achieve a developed state through their own prior exercise: it is the undeveloped capacity itself which undergoes development. On this view, capacities which we already possess undergo development through prior activity, achieving a developed state as an end result. I am therefore attributing to Aristotle a way of speaking that is perhaps non-standard in English, though not entirely unfamiliar.²⁶⁹ According to our ordinary way of speaking, students may lack *the* capacity to play the piano or *the* capacity to do something grammatical, and these are *the* wholly new capacities that develop as a result of learning. But this is because we are in the habit of hearing "*the* capacity to φ " as "the *refined* capacity to φ ." I am suspicious that this is an ambiguity in our own language where Aristotle is more precise. According to our way of speaking, perhaps it is right to say that the student is capable of doing grammatical things without yet having *the* capacity to do grammatical things. Yet, when asked "in virtue of what capacity is he so capable?" there is resistance (on the Standard View) to the idea that it is in virtue of the capacity to do grammatical things. Indeed, on this point Aristotle may be urging a nuance overlooked perhaps even by his own contemporaries, since he sees a more intimate connection between capacities and activities, so that every activity is performed in virtue of some capacity an agent already has. Unless we deny that the student is actively participating in his own learning—instead considering education to be like putting sight into blind eyes—we must admit that the capacity is already there, albeit in an undeveloped state. This capacity surely does not issue in a refined or deliberate activity, which must instead be guided by a teacher (or by chance). But in

²⁶⁹ Consider, for example, the difference between "a storm is developing" and "a fetus is developing fingernails." In the former case what develops is an end state; in the latter case some subject is undergoing the development of an end state. "Develop" can be used transitively or intransitively, so that what develops can be either an end state or a subject.

those cases the teacher is guiding the student's own activity and giving it shape, rather than straightforwardly acting on some merely passive capacity to develop. Aristotle challenges us to set aside ordinary language for more exact ways of speaking.

If, for Aristotle, the unlearned person is already capable of engaging in an activity appropriately identical to the activity of the expert, and it is by means of engaging in this prior activity that he develops the capacity to φ , then we must reject the strong claim that an unlearned person at first potentiality is incapable of any sort of activity before he develops. Rather, the person at first potentiality who is capable of learning grammar (like the first potential knower in *de Anima* II.5) is *eo ipso* capable of doing grammatical things, for this is the only way to learn grammar (as in *Nicomachean Ethics* II.4). So, it is by the exercise of an undeveloped capacity that the very same capacity undergoes development. This requires that first potentiality not only admit of development *as a capacity* but also admit of the appropriate prior activity. Therefore, the **Core Claim** of the Standard View ought to be abandoned.

Importantly, however, such prior activity cannot be an exercise of the *developed* capacity: one does not acquire knowledge or virtue by exercising the very thing one is acquiring.²⁷⁰ Although the prior activity of the student is in a significant respect the same as the perfected activity of the expert, it cannot follow—on pain of incoherence—that the prior activity of the student is an exercise of very knowledge or virtue he has yet to develop. Rather, Aristotle's account of learning escapes the usual charge of incoherence because the prior activity is an exercise of the undeveloped capacity that the subject already possesses before he learns; the same capacity undergoes development as it is exercised. If we avoid conceiving of developed capacities like knowledge and virtue as newly acquired capacities, this alternative comes into focus. What is acquired is the ability to engage in the very same activity as before but now in a new way: the novelty in the expert's activity is marked by an adverb, not by a verb. What one acquires through learning, then, is a developed state of a capacity that one already had, rather than a new capacity altogether.

²⁷⁰ Some translations of *Nicomachean Ethics* II.1 are misleading: Aristotle does not claim that we get the virtues by previously exercising *them*, as Ross' translation suggests. Rather, we get the virtues by engaging in appropriate activity beforehand (τὰς δ' ἀρετὰς λαμβάνομεν ἐνεργήσαντες πρότερον); one does the very things one is learning how to do, but importantly this does not issue from the developed states themselves that one has yet to achieve. *Pace* Taylor (2006), 82 "But now [in II.4] Aristotle seems to have slipped away from addressing the crucial problem, at least as it arises from the formulation in chapter 1. There he explicitly asserts (1103a31-2) that we acquire the virtues and other skills by having previously exercised them."

Now, some defenders of the Standard View may be content to say that first potentiality is ultimately directed toward some activity; indeed, they might even insist on this.²⁷¹ On this approach, first potentiality is proximately directed toward development, so that first potentiality is most properly a capacity to become capable of φ -ing and not yet a capacity to φ . Nevertheless, this version of the Standard View allows that “raw capacities” are ultimately and remotely directed toward activity. To see why this concession by defenders of the Standard View is still too weak, consider again the difference between learned and natural capacities. After all, the same could be said of undeveloped natural capacities, that they are *ultimately* directed toward activity but not yet *proximately*. As Aristotle explicitly says, we do not see before we develop eyesight and, in general, we must develop natural capacities before we can exercise them. In the case of natural capacities, a developed capacity may be a stepping stone ultimately *en route* to some activity, but there is no crossing to activity without it. In those cases, while activity may indeed be ontologically and conceptually prior to potentiality, it remains temporally posterior to development. In stark contrast, however, Aristotle clearly maintains that we learn by doing the very things we are learning to do, so that activity of the appropriate sort must also *temporally* precede the development of these capacities. First potentiality must itself already *proximately* admit of activity, since any capacity to learn must already involve a capacity to engage in the relevant prior activity. It is as if, in these cases, the stepping stones gradually become available only by means of crossing to the other side, perhaps like a field bridge that soldiers must build from both shores.

The image of the field bridge is helpful for illustrating a further feature of Aristotle’s account of learning. Soldiers must cross the river before they have built the bridge; indeed, at first, they cross for the sake of building. This might seem puzzling, since they are ultimately building the bridge for the sake of crossing. If capacities are ordinarily developed for the sake of using them, and if in general capacities are directed toward their activities, this reversal may seem unexpected. Here activity is prior and more proximate than development. I reply that although the soldiers must cross the river in order to build the bridge, this crossing is ultimately directed at a much more stable crossing that uses the bridge. Although an unrefined river-crossing necessarily precedes and helps to accomplish the bridge-building, it is ultimately a stable and refined river-crossing which is aimed at.²⁷² This prior activity ($\pi\rho\omicron\text{-}\acute{\epsilon}\nu\acute{\epsilon}\rho\gamma\epsilon\iota\alpha$) is therefore not an actuality ($\acute{\epsilon}\nu\tau\epsilon\lambda\acute{\epsilon}\chi\epsilon\iota\alpha$), since it is not yet an

²⁷¹ See Kosman (2013) 59-60.

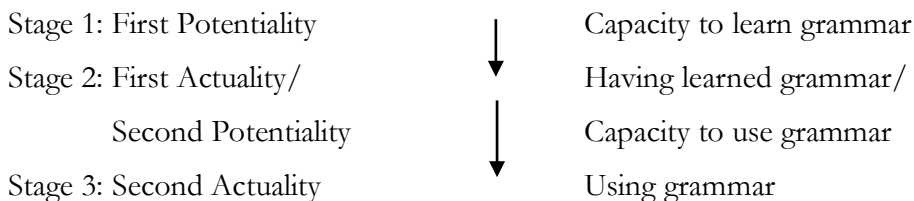
²⁷² Recall *Meta.* Θ .8 (1050a10-15) above.

end (τέλος) that is possessed (ἔχειν).²⁷³ In this respect the only activity which can be rightly said to be an actuality (ἐντελέχεια) must proceed from a settled state (ἔξις). In this way, we have arrived at a final qualification of this section: although first potentiality is already a capacity for and directed toward the relevantly unified yet unrefined activity, this activity is nevertheless imperfect and not an end in itself.²⁷⁴

3.3.4 Squaring the Triple Scheme

In view of the preceding discussion, let us recall the Standard View of the Triple Scheme:

Figure 2. The Standard View of the Triple Scheme



Given the discussion so far, an alternative account has come into view, one according to which the proper and fundamental correlates are potentiality or capacity (δύναμις) and activity (ἐνέργεια), each admitting of various grades of development and refinement. The following model results:

Figure 3. The Two-Dimensional Scheme



²⁷³ Though the precise etymology of the word is difficult and indeed controversial, it seems clear that the word implies the possession of an end or complete state.

²⁷⁴ A possible worry for my view is that Aristotle says in *de An.* II.1 in “But knowledge is prior in generation [sc. to the use of knowledge] in the individual case.” I supplied “to the use of knowledge,” but there is in fact no comparative correlate in the text: προτέρα δὲ τῆ γενέσει ἐπὶ τοῦ αὐτοῦ ἢ ἐπιστήμη. One may take this line in the following way: knowledge is not just prior to the use of knowledge, but also to intellectual activity more generally (θεωρεῖν). However, the activity that has been mentioned here is given as an example of *entelecheia*, and so is an activity perfect and complete. I am proposing, however, that there is another kind of θεωρεῖν which is prior to the possession of knowledge in generation even in the individual case. The wider context, in which the only activity on offer is a complete and perfected activity, vitiates the force of this objection.

On this picture, the fundamental relation is between capacity and activity, between capability and exercise. The horizontal dotted line at the top represents the unrefined and undeliberate character of activity issuing from an undeveloped capacity. The bolded line at the bottom represents the refined character of activity issuing from a developed capacity, which is accomplished at will. The vertical dotted line on the side from undeveloped to developed capacity shows the gradual development of the capacity *as a capacity* along a continuum throughout the process of learning, by which the developed state gradually, as it were, settles in.

This Amended View, which the above figure illustrates, captures everything that the Standard View wants to maintain, most importantly that the developed capacity is a fulfillment of the undeveloped capacity and that this developed capacity is directed toward a refined and deliberate activity. The Standard View's strictly linear and one-dimensional structure, however, cannot capture the fact that, for Aristotle, at all stages of his development a learner is capable of engaging in activity. This feature of first potentiality can be captured by this Amended View because it is two-dimensional and not strictly linear. Opposing capacity and activity on one axis and the grades of development or refinement on another allow us to capture all aspects of this complex developmental process.

Let us return to the chapter from which the schema was originally derived, *de Anima* II.5:

[a] But we must also make distinctions concerning potentiality and actuality; for just now we have been speaking about them without qualification. **[b]** For in one way “knower” is as we might call a man a knower, because a man is of the class of knowers and those having knowledge, **[c]** and in another way, as we call someone a knower who already possesses [e.g.] grammatical knowledge. **[d]** Each of these is capable (*δυνατός*), but not in the same way (*οὐ τὸν αὐτὸν τρόπον*), the one because his kind and his matter is of a certain sort, the other because he can contemplate at will (*βουληθεὶς δυνατὸς θεωρεῖν*), unless something from without should stand in the way. **[e]** But the one already contemplating is actually (*ἐντελεχεῖα*) and properly knowing this A. **[f]** Both of the first two, then, are potential knowers, but the one [comes to be] having been altered through learning and having changed often from a contrary state, while the other [comes to be] from possessing sense or grammatical knowledge but not exercising it to exercising it in another way (*ἄλλον τρόπον*).²⁷⁵

²⁷⁵ *De An.* II.5 417a21-b2.

There are features of this passage that the Standard View simply cannot explain. First, Aristotle says that each of the first two knowers is capable, but in other passages this word indicates a capability *for activity*.²⁷⁶ While the first potential knower is not here explicitly said to be capable of contemplating ($\delta\upsilon\nu\alpha\tau\acute{o}\varsigma\ \theta\epsilon\omega\rho\epsilon\acute{\iota}\nu$), analogous language is used just lines later when recapping the same distinction:

But for now let this much be distinguished, that “in potential” is not spoken of in a simple way, but in one way as we might say the child is capable of strategizing²⁷⁷ ($\delta\upsilon\nu\alpha\tau\acute{o}\varsigma\ \sigma\tau\rho\alpha\tau\eta\gamma\epsilon\acute{\iota}\nu$), and in another way as the person of an appropriate age; in this latter way something possesses the perceptual faculty.²⁷⁸

First potentiality here is clearly a capability for φ -ing and this should inform any reading of the preceding chapter. Moreover, Aristotle does not say our longer passage what the **Core Claim** says, that the second potential knower is the only one of the two who can contemplate, but rather that the second one can contemplate whenever he wishes. If the second alone were capable of contemplating, why add “at will”? Rather, both are capable of contemplating *simpliciter* and the second knower can do this at will, this being his specific difference.²⁷⁹ Finally, our passage ends by emphasizing how the second knower goes from not acting to acting “in another way,” going to

²⁷⁶ See, for example, *Meta.* Δ .12 and Θ .6. I concede that “in potential” ($\delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota$) is said in more extended senses, such as the matter of a statue, but this matter is not said to be capable ($\delta\upsilon\nu\alpha\tau\acute{o}\varsigma$). Aristotle prefers to use the term “capable” when something is capable of engaging in an activity, perhaps most generally the activity of motion or change ($\kappa\acute{\iota}\nu\epsilon\sigma\theta\alpha\iota$). See also *de Interpretatione* 13 23a7ff. What is more, Aristotle attributes an *active* capability to the person at first potentiality: this is not the mere capability of being changed or being acted upon, but already a capability of engaging in activity.

²⁷⁷ Although the English “strategize” is a potentially misleading choice for the Greek $\sigma\tau\rho\alpha\tau\eta\gamma\epsilon\acute{\iota}\nu$, it is preferable to “being a general” because the Greek verb can denote *acting* as a general as well as simply being one. The “-ize” suffix can sometimes help convey this meaning in English, but alas “generalize” already means something altogether different.

²⁷⁸ *De An.* II.5 417b30-a1: $\nu\tilde{\upsilon}\nu\ \delta\acute{\epsilon}\ \delta\iota\omega\rho\acute{\iota}\sigma\theta\omega\ \tau\omicron\sigma\omicron\upsilon\tau\omicron\nu,\ \acute{\omicron}\tau\iota\ \omicron\upsilon\chi\ \acute{\alpha}\pi\lambda\omicron\upsilon\ \acute{\omicron}\nu\tau\omicron\varsigma\ \tau\omicron\upsilon\tilde{\nu}\ \delta\upsilon\nu\acute{\alpha}\mu\epsilon\iota\ \lambda\epsilon\gamma\omicron\mu\acute{\epsilon}\nu\omicron\upsilon,\ \acute{\alpha}\lambda\lambda\acute{\alpha}\ \tau\omicron\upsilon\tilde{\nu}\ \mu\acute{\epsilon}\nu\ \acute{\omega}\sigma\pi\epsilon\rho\ \acute{\alpha}\nu\ \epsilon\acute{\iota}\pi\omicron\iota\mu\epsilon\nu\ \tau\omicron\nu\ \pi\acute{\alpha}\iota\delta\alpha\ \delta\upsilon\nu\alpha\sigma\theta\alpha\iota\ \sigma\tau\rho\alpha\tau\eta\gamma\epsilon\acute{\iota}\nu,\ \tau\omicron\upsilon\tilde{\nu}\ \delta\acute{\epsilon}\ \acute{\omega}\varsigma\ \tau\omicron\nu\ \acute{\epsilon}\nu\ \acute{\eta}\lambda\kappa\acute{\iota}\alpha\ \acute{\omicron}\nu\tau\alpha,\ \omicron\upsilon\tau\omicron\varsigma\ \acute{\epsilon}\chi\epsilon\iota\ \tau\omicron\ \alpha\acute{\iota}\sigma\theta\eta\tau\acute{\iota}\kappa\omicron\nu.$ “Perceptual faculty” translates $\alpha\acute{\iota}\sigma\theta\eta\tau\acute{\iota}\kappa\omicron\nu$, which is an adjective denoting “perceptive” or “perceptual.” I supply “faculty,” in part because it is not a term I have used thus far to translate as *dynamis* and there is no noun here in the Greek.

²⁷⁹ It is perhaps possible that someone who is learning is capable of varying degrees of deliberateness and refinement along the way. This is why it is helpful to look at the limit case of someone who is wholly unlearned, whose (e.g.) grammatical activity will be maximally at the mercy of another’s prompting and guidance. As the *hexis* of grammatical knowledge settles in, the student becomes more and more capable of deliberate and refined grammatical activity, approaching the expert’s activity.

activity in a different way than the first knower. This recalls Aristotle’s earlier claim that both of the first two knowers are capable “but not in the same way.”²⁸⁰ These two adverbial phrases suggest a difference between two cases involving activity (and capacities for activity) properly so-called. Thus, on my reading, our passage is making a distinction between two different ways of being capable of actively φ -ing, and how each one transitions to the activity of φ -ing in a different way.

Although in other contexts (e.g. *de Anima* II.1), Aristotle readily calls the inactive possession of knowledge an “actuality” (ἐντελέχεια), he resists doing so in our passage. Rather, he speaks in our passage of two potential knowers and only one actual one, namely the one who is actively contemplating. In this light, it is quite revealing when interpreters “find Aristotle unwilling to tell us as much as we would like to know about the actuality side of the distinction.”²⁸¹ It is precisely because in this passage he does not want us thinking of the inactive possession of knowledge as a perfection of some more fundamental capacity, though it is surely so. Rather, he here compares two ways of being capable of contemplating and how each of these capacities is directed toward the same activity in a different way.

3.4 OBJECTIONS AND REPLIES

3.4.1 Avoiding Redundancy from the Start

Someone might object at this juncture: “I concede: if learning by doing is to be possible in this special sense, as Aristotle clearly maintains, then for an unlearned person to be capable of learning he must also be capable of engaging in the appropriately identical prior activity. But why should we equate these two, identifying someone’s capacity for prior activity with the capacity to learn and develop? Perhaps the capacity for prior activity is more general, like the capacity for speaking a

²⁸⁰ These adverbial phrases can be taken to modify different things in the passage, as Hicks (1907) suggests *ad loc.*, but the position of the phrase suggests this alternative. At the very least, the mere possibility of my reading must be conceded.

²⁸¹ See Burnyeat (2002) 47, 52. I agree with his method, however, not to reach too far outside of *de An.* II.5 in order to interpret it (53). We disagree about how much can be brought in from elsewhere and just how “incomplete” the account in II.5 is.

natural language, or perhaps more specific, like the capacity to utter dental stops.²⁸² But why suppose the *capacities* to learn and to speak, for example, French are the same capacity?" This objection rests on the **Core Claim** lying at the heart of the Standard View, which holds that first potentiality is a capacity for passive development, but not as such a capacity for active engagement in activity. The objector grants some version of the **Learning Principle** but is uncomfortable with saying that the very same capacity is actualized in the student's learning and in his prior activity. The objector agrees that the prior activity is an exercise of *some* capacity the student has, but denies that it is the *same* as the capacity to learn.

In the first place, it is not my view that the capacities for learning by prior activity and for *refined* activity are completely identical, nor are the respective activities completely identical. Following Aristotle, I have sought to distinguish ways in which the activities are the same and ways they differ by using verbs and adverbs. In a similar way, on my Amended View, although the capacity itself is the same in both the student and the expert, it exists in two different states of development: the student's capacity in an undeveloped state issues in unrefined activity, the expert's capacity in a developed state issues in refined activity. Nevertheless, I have been urging that a student learning (e.g.) to speak French by speaking French is already exercising his capacity to speak French, though in an undeveloped state.

Even given these qualifications, there may still be worries about identifying the capacity for learning and for prior activity, perhaps that my view would result in a problematic multiplication of first potentialities. The objector presses: one should rather say that an unlearned person has a capacity for learning and indeed for prior activity, that is, a capacity for speaking some natural language, but not yet for speaking French. On this approach, the undeveloped capacity is indeterminate and therefore should not be described in unified and determinate terms, for speaking French in particular. This objection is motivated by the idea that the determinate capacity characteristic of a fluent French-speaker is not yet possessed by the student. Rather, the student possesses some indeterminate and general capacity for an indeterminate and general activity. We attribute too many first potentialities to the one year-old if we say he has a first potentiality with respect to each and every natural language.

²⁸² The idea that activities themselves are more specific is considered above in III.3.2. The objector here in III.4.1 grants that the activity itself is an instance of speaking French, but denies that this unified activity issues from a capacity for speaking French.

I reply that such a multiplication of capacities is benign. When we say that human beings have the capacity to learn and to speak natural languages, every possible natural language is subsumed under this description, perhaps just as a finite magnitude is infinitely divisible. If we adopt the objector's preferred description, we say that a learner's unrefined French-speaking is an exercise of a general capacity for speaking natural language. But this indeterminate capacity is never exercised in an indeterminate way: the toddler is always learning to speak a specific language, the musical student is always learning to play a specific instrument. Accordingly, although the prior activity in each case is unrefined, it is never indeterminate in the way that the objector insists. To be sure, I readily admit that the toddler's unrefined French-speaking and the adult's refined French-speaking are both exercises of the general capacity every human has for language. However, unlike the objector, I do not thereby deny that both activities are also exercises of the capacity to speak French, described in more determinate terms. Any multiplication of first potentialities is a benign reflection of a truly multifaceted phenomenon: it makes sense to characterize the general capacity to speak a natural language as a capacity to speak French when considering someone who is learning to speak French, leaving unmentioned other less relevant ways this general capacity can be exercised and developed (e.g. learning and speaking Basque).

What is more, as long as the objector insists on separating the capacity to learn and the capacity for prior activity, he faces a dilemma himself. Whatever other descriptions he might ascribe, in order to avoid denying the **Learning Principle** he must also admit that the student is already speaking French, though in an unrefined way. Given that the student's activity is already an instance of French-speaking, and since Aristotle posits capacities on the basis of the activities that realize them, the student must already be exercising a capacity for speaking French.²⁸³ But, if the capacity for prior activity is distinct from the capacity to learn, as the objector insists, then the student will already have two distinct capacities for French, one for learning and one for speaking. And once he learns, he will have a third distinct capacity for French, now for speaking in a refined way. Thus the dilemma: the objector must either deny the **Learning Principle** or risk a truly problematic multiplication of capacities for French. Why ought we to posit these distinct capacities, one which is actualized in learning alone and another which is actualized in the prior activity that brings learning about? Or, from a different angle, why posit one capacity which is directed at the unrefined prior

²⁸³ On positing capacities in virtue of activities, see again *de An.* I.1 402b9-14.

activity of φ -ing and another distinct capacity which is directed at the very same activity once it is performed in a refined way?

An advantage of the Amended View is that we can avoid this problematic redundancy simply and from the start: first potentiality just is the capacity to learn by doing, and so it is at the same time a capacity for development and a capacity for activity. In this way, the very same capacity undergoes development through learning and thereupon, to keep with our example, issues in refined French-speaking. This is precisely the way Aristotle avoids redundancy in other contexts, that is, by refusing a problematic multiplication at the start.²⁸⁴ Similarly in the present discussion I insist on identifying the capacity to learn with the capacity to engage in the prior activity by which learning comes about. This undeveloped capacity of the student undergoes development *as a capacity* through its own unrefined activity, thereby coming to have a developed state. By conceiving of first potentiality in this way, we can avoid the risk of redundancy from the start.

3.4.2 Returning to Natural Capacities

So, when we learn, we do not acquire entirely new capacities by exercising *them*, for surely incoherence would result. Rather, undeveloped capacities we already have undergo development as capacities and achieve developed states through prior exercise. First potentiality consists in the ability to engage in unrefined activity of φ -ing in order to refine and develop one's very capacity to φ . But one might wonder about natural capacities at this juncture, especially since, on the Standard View, the concept of first potentiality applies to all capacities, natural and learned alike. An upshot of my argument, however, is that first potentiality is a distinctive sort of capability in virtue of which one can learn by engaging in the appropriate prior activity that Aristotle's **Learning Principle** requires. If so, it follows that first potentiality simply has no analogue in the case of natural capacities, because it applies only to capacities that develop by learning and by prior activity. But at first this might seem strange, given that the purpose of *de Anima* II.5 is to introduce perceptual capacities, which are natural.

²⁸⁴ When faced with an analogous difficulty about whether there is some further perceptual power that is aware of first-order perception, he worries about both redundancy and regress. Instead of entertaining the possibility of a second-order faculty for perceptual awareness, he rejects the notion at the outset, insisting that each perceptual power must also be aware of its own activities. See *de An.* III.2 425b12-17.

Before attending to concerns about the purpose of *de Anima* II.5 as a whole, from which our passages have been drawn, let us consider another more specific concern about the analogy between natural and learned capacities. First potentiality, on my view, is capable of actualization in two respects—in its own development and in unrefined activity—and such duality might seem to be a strange consequence. After all, an important argument in favor of my view draws on Aristotle’s broader conception of capacity and activity. He is committed, in the first place, to the idea that every true capacity is capable of engaging in its correlative activity.²⁸⁵ Some capacities are active (e.g. that which can heat) and some are passive (e.g. that which can be heated).²⁸⁶ But at least in the case of natural capacities, when something in possession of a capacity comes into the appropriate sort of contact with its correlative agent or patient, the relevant activity results straightaway and always in the same way.²⁸⁷

Perceptual capacities, for example, develop by nature and exist in a developed state as soon as the animal is generated. Indeed, Aristotle makes this claim later on in *de Anima* II.5: whenever some animal has been generated, it already possesses the capacity to perceive, and already at a level analogous to knowledge.²⁸⁸ Taken with the passage from *Nicomachean Ethics* II.1 quoted earlier, Aristotle thinks perceptual capacities do not develop through prior exercise but rather through the ordinary course of generation and, once they come to be, they already exist in their most perfected state, analogous to possessing knowledge. Accordingly, one might be tempted to say that, for Aristotle, whatever immediately precedes animal generation is capable of perceiving in the same way that the unlearned person is capable of doing grammatical things, seeking an analogy between natural and learned capacities at the level of first potentiality. And perhaps one might be tempted to understand the unlearned person’s capacity simply on the model of natural capacities, so that the

²⁸⁵ For an extended discussion of this principle, see *Meta.* Θ.6-7, especially 1049a1-5. See also *Meta.* Δ.12 1019a32-b15.

²⁸⁶ Recall “active” here denotes agency (correlative with passivity), but does not necessarily denote activity (correlative with capacity or capability). Active capacities and active activities are distinct, but share an agential character.

²⁸⁷ Natural capacities go to activity always in the same way, while the same is not true for non-natural capacities. The hot always heats whenever it heats, while capacities for moral activity admit of different modes of activity before they achieve a settled state. Once they achieve the settled state they activate in a fixed way like natural capacities; this is not true of intellectual capacities which always admit of multiple modes of activation. Recall *Meta.* Θ.5 and *EN* V.1, above.

²⁸⁸ *de An.* II.5 417b16-18.

unlearned person passively receives form just like the proximate matter in generation. In either case, since Aristotle clearly compares the development of natural and learned capacities, saying that the first transition for perception is accomplished by natural generation, one might conclude that it is a first transition *from* a first potentiality even for perception and for natural capacities generally.²⁸⁹ On the Standard View, the analogy with perception and knowledge in the passage is thoroughgoing, so that the development of each capacity can be captured by the same three-stage model.

In his discussions of the Triple Scheme, however, Aristotle never mentions a natural capacity at the level of first potentiality.²⁹⁰ Indeed, in *de Anima* II.5 itself he clearly states that first potentiality is actualized “by having been altered through learning” (417a31), suggesting that this stage is distinctively associated with development by learning and not by nature. Although this quote implies some passivity in learning, it is compatible with the student being actively engaged in his own learning, as discussed previously. And although Aristotle certainly does say that the first transition in the perceptual case is accomplished in generation, this need not mean that natural generation is a transition from first potentiality to second potentiality. Rather, all Aristotle must mean is that first transitions are directed *toward* second potentialities, while leaving open what the *terminus a quo* is in each case.

This ought to be left open, moreover, since he denies in other passages that the preceding matter in generation is potentially living or perceiving in this proximate respect. Unlike the unlearned person, the preceding matter of natural capacities is only *potentially* capable of living or perceiving.²⁹¹ The unlearned person, as I have argued, must already be capable of engaging in a distinctive kind of activity, and so he is already capable in a true and proper sense. The same cannot

²⁸⁹ Burnyeat (2002) at 52 n64 adopts this line: “But before birth comes the *prōtē metabolē* of 417b 17, and we shall find that this passage from being a first to being a second potentiality perceiver has a role of its own in the refinement process.”

²⁹⁰ See also *Phys.* VIII.4 255a30-b13. These two passages give all three stages and place natural capacities at the *second* stage. In other places Aristotle distinguishes between (e.g.) possessing and using knowledge without mentioning first potentiality.

²⁹¹ See, perhaps most importantly, *Meta.* Θ.7 1049a14-18: “Seed is not yet [in potential (δυνάμει)] (for it must also change in another), but whenever it is already such through its own principle, then this (τοῦτο) is in potential (δυνάμει): but that (ἐκεῖνο) [sc. seed] lacks another principle, just as the earth is not yet potentially a statue (for once it has changed, it will be bronze).” See also *de An.* II.1 412b25-27: “But that which is potentially so as to live is not that which has lost the soul, but that which has it: but the seed and the fruit are **potentially** such a body” (my emphasis), i.e. seed is *potentially* capable of living.

be said of the preceding matter in the development of natural capacities; in those cases the matter is only potentially, but not yet actually, capable of φ -ing. This preceding stage is, as it were, at *zeroth* potentiality. As soon as it comes to be actualized, however, it is capable of heating or living or perceiving in the *second* and developed way. It seems as if, in the case of natural capacities, first potentiality is skipped.

This result is unsurprising if we understand first and second potentiality to be two different ways of being actually capable of engaging in an activity. On Aristotle's view at any rate, natural capacities admit of only one mode of activity (e.g. as fire heats) and as soon as such a capacity is truly present it is already capable of its most developed and refined activity. To be sure, there is still a process of development for natural capacities, but whatever developmental stages precede the developed capacity are not yet capable of activity, for "it was not from often seeing or often hearing that we received these senses." Accordingly, natural capacities represent the base case where development leaps, as it were, from a state where activity is truly impossible to another where activity is perfect and refined. The proper actualization of any capacity is some activity, and if no activity is yet possible, then the capacity itself is not yet actually present. In contrast, prior activity is involved in the development of all capacities that develop by learning, so that such capacities admit of activity both before and after they undergo development. This creates a complication of the base case: for natural capacities the presence or absence of a capacity is determined straightforwardly by the capability or incapability of engaging in refined activity, but for learned capacities there are several stages of the developmental continuum on which one is capable of engaging in activity, as it were, at each step along the way. The correlative activities at each stage of development will, of course, exhibit varying degrees of refinement.

Now, perhaps whatever immediately precedes human generation is *potentially* capable of perceiving in the same way that it is *potentially* capable of contemplating: an analogy might obtain between the two capacities at what I am calling *zeroth* potentiality. But, Aristotle tells us, as soon as we are generated we possess our perceptual capacities in a developed state corresponding to the possession of knowledge; in contrast, our intellectual and moral capacities must still be developed by prior activity.²⁹²

²⁹² An infant can possess intellectual or moral first potentialities and therefore be capable of unrefined intellectual or moral activities without yet actively exercising them. Just as a builder cannot exercise his art unless he has the right materials, so too an infant may not exercise some yet undeveloped intellectual or moral capacity, lacking the right perceptual or desiderative "materials."

Figure 4. Perceptual vs. Intellectual Development

<u>Stages</u>	<u>Perception</u>	<u>Intellection</u>
Stage 3: Activity	Activity of Perceiving	Activity of Contemplating
Stage 2: Developed Capacity	Capacity to Perceive	Capacity of Knowledge
Stage 1: Undeveloped Capacity	*NO ANALOGUE*	Capacity to Learn
Stage 0: Pre-Generation	Potential Capacity to Perceive	Potential Capacity to Contempl.

Thus we return to the concern with which this section began: this complexity in the case of learned capacities explains the dual-directedness of first potentiality. On the one hand, an undeveloped capacity at first potentiality admits of development *as a capacity*, while on the other hand it already admits of activation in prior activity. This explains how first potentiality has both active and passive features. While it is true that as soon as natural capacities are actually present they admit of fully refined activity, Aristotle holds a more complex account for learned capacities. But this should not lead us to deny the general principle that capacity is always directed toward activity; rather, the complication in the case of learned capacities is that capacity and its correlative activity admit of degrees of development and refinement on a continuum as the student learns. Far from being a problem for Aristotle's view, the dual-directedness of first potentiality is precisely what his theory of learning demands.

3.4.3 The Broader Purpose of *de Anima* II.5

In this final section I briefly address a remaining worry about my interpretation of *de Anima* II.5, although it would be impossible to give a comprehensive treatment in a single paper, even more difficult when making connections to other texts.²⁹³ I have maintained throughout that *de Anima* II.5 considers perception generically and prepares for the more detailed account of perception to follow. But my argument has been that a key distinction in the chapter does not apply to capacities that develop by nature, including perception. But why would Aristotle introduce a concept that does not apply to perception in a chapter principally concerned with perception?²⁹⁴

²⁹³ Burnyeat (2002) is as close as one might come to giving such a treatment in a single paper, taking over sixty pages. I give a more thorough treatment of this interpretive question in another place.

²⁹⁴ See the first line of *de An.* II.5 at 416b33: "let us speak in general about the whole of perception" (λέγωμεν κοινῆ περὶ πάσης αἰσθήσεως).

One of his chief aims in the first half of *de Anima* II.5 is to distinguish two aspects of “to perceive” and “perception,” active and potential.²⁹⁵ Since the perceptual faculty remains even when it is not at work, it must be essentially potential and not (necessarily) active. So, Aristotle insists that the faculty taken in itself, while readily admitting of activity, must not be conceived of as necessarily active at any given time. But one may wonder at this point in the argument what it means for the perceptual faculty to be essentially a potentiality and of what sort of activity it might admit. Should we understand the fulfillment of the perceptual faculty on the model of learning, whereby some undeveloped capacity comes to have a more determinate form as it is used, perhaps as fire heats a pot of water? Or is perceptual activity better understood as analogous to the musician playing or the builder building, whereby some developed capacity goes to refined activity without needing to undergo any further development? These alternatives are only implicit in the first half of *de Anima* II.5, which Aristotle goes on to distinguish in the second half of the chapter. First potentiality is introduced in a chapter dedicated to perception precisely to dismiss its relevance to perception; though, as Aristotle says, there may be time to reintroduce and clarify the notion more thoroughly later on.²⁹⁶

3.5 RECOGNIZING ARISTOTLE’S POTENTIAL

This chapter began with a puzzle about learning, in particular about the intuitive thought that we learn to build houses by building houses and gain knowledge of elephants by intellectually considering elephants. I have argued that Aristotle’s distinction between two sorts of potentiality allows him to answer that puzzle in a distinctive way. In every case where a student is truly capable of learning, in virtue of the same capacity he is also capable of engaging in the relevant prior activity. It is by exercising an undeveloped capacity in an unrefined way that the very same capacity gradually achieves some developed state. Since natural capacities do not develop in this way, on Aristotle’s view, I concluded that first potentiality has no analogue in the natural case. So understood, first potentiality is directed toward two different ends: first its own development as a capacity, and

²⁹⁵ “Active” (ἐνεργεία) and not “actual” (ἐντελεχεία): *energeia* here indicates activity, which *entelecheia* does not necessarily do. After all, first actuality (πρώτη ἐντελέχεια) is having but not exercising knowledge (ἔχειν καὶ μὴ ἐνεργεῖν), cf. *de An.* II.1 412a26.

²⁹⁶ See *de An.* II.5 417b29: many suppose (quite reasonably) that this points to *de An.* III.4 429b5-9.

secondly engaging in unrefined prior activity. This dual-directedness of first potentiality is a complication of the simple picture that obtains for natural capacities, so that learned capacities involve both passive and active features. This is nevertheless precisely what Aristotle's account of learning requires. Thus Aristotle's distinctions between two developmental stages of a capacity provide the necessary resources to defend his otherwise intuitive account of learning.

4. CONTEMPLATING IN ORDER TO LEARN: SOME PROPOSALS REGARDING PRIOR INTELLECTUAL ACTIVITY

Ὁ δέ γε νῦν λόγος, ἦν δ' ἐγώ, σημαίνει ταύτην τὴν ἐνοῦσαν ἐκάστου δύναμιν ἐν τῇ ψυχῇ καὶ τὸ ὄργανον ᾧ καταμανθάνει ἕκαστος, οἷον εἰ ὄμμα μὴ δυνατόν ἦν ἄλλως ἢ σὺν ὅλῳ τῷ σώματι στρέφειν πρὸς τὸ φανὸν ἐκ τοῦ σκοτώδους, οὕτω σὺν ὅλῃ τῇ ψυχῇ ἐκ τοῦ γιγνομένου περιακτέον εἶναι, ἕως ἂν εἰς τὸ ὄν καὶ τοῦ ὄντος τὸ φανότατον δυνατὴ γένηται ἀνασχέσθαι θεωμένη· τοῦτο δ' εἶναί φασιν τὰγαθόν. ἦ γάρ;

--- Ναί.

Τούτου τοίνυν, ἦν δ' ἐγώ, αὐτοῦ τέχνη ἂν εἴη, τῆς περιαγωγῆς, τίνα τρόπον ὡς ῥᾶστά τε καὶ ἀνυσιμώτατα μεταστραφήσεται, οὐ τοῦ ἐμποῦσαι αὐτῷ τὸ ὄραῖν, ἀλλ' ὡς ἔχοντι μὲν αὐτό, οὐκ ὀρθῶς δὲ τετραμμένῳ οὐδὲ βλέποντι οἷ ἔδει, τοῦτο διαμηχανήσασθαι.²⁹⁷

Let us review the argument so far. In the preceding chapter I argued for a certain interpretation of Aristotle's account of learning that applies generically to every case of acquired or developed capacity. In particular, I have argued that, just as in moral formation, so too in intellectual formation there must be a particular kind of prior activity which precedes and brings about the development of intellectual *hexeis*, namely the activity of the expert. Recall that this view is strongly recommended by several passages, for example *Metaphysics* Θ.5: for all those capacities developed by habituation (ἔθος) or by *logos*, in order to develop them it is necessary for us to have already exercised them beforehand.²⁹⁸ Furthermore, in each case it is necessary that we learn by engaging in the very

²⁹⁷ *Rep.* VII 518c4-d7.

²⁹⁸ Cf. *Meta.* Θ.5 1047b34-5. "They" are subjects and not products of development (see chapter three).

activities we are learning to do. Accordingly, we acquire *hexeis*, both moral and intellectual, by engaging in the very activity toward which the *hexis* under development is directed.

I also argued that those capacities which develop by prior exercise, whether by habituation or by *logos*, presuppose a capacity for engaging in that very prior activity. First potentiality, on my view, is not only a capacity to learn but also a capacity to engage in the prior exercise that, on Aristotle's view, drives and accomplishes the process of learning. Learning, therefore, is achieved by prior exercise of the very same capacity which undergoes development thereby. This more precise characterization of the role of prior activity in the acquisition of virtues, both moral and intellectual, is strongly recommended, in part by *Metaphysics* Θ.8: those who are learning to play the lyre learn to play the lyre by playing the lyre, and students engage in a kind of speculative thinking (θεωρεῖν) in order to acquire speculative knowledge (θεωρητική).²⁹⁹ The same more precise characterization holds of the moral and productive cases, as is well known from the *Nicomachean Ethics*.³⁰⁰ As a result, we came to an alternative view of the distinctions in *de Anima* II.5, in particular between the two potential knowers and their relation to the one actual and active knower mentioned in that passage.

Now, I have conceded that this “first activity” or “pre-activity” (προ-ενέργεια) is itself neither an end nor a perfection in the sense of *entelecheia*. And while it is true that this prior activity must be specifically the same activity toward which the *hexis* under development is directed, I have nevertheless insisted that this first activity does not and cannot proceed from that very *hexis* which is under development, on pain of incoherence. I have held rather that this prior activity proceeds from the *dynamis qua* undeveloped, which *dynamis* humans possess innately (at least in the cases of most interest to us).³⁰¹ This presupposes an understanding of *hexis* as a developed or perfected state of a *dynamis*, and *dynamis* of this kind themselves admit of differing states of development.³⁰² I have

²⁹⁹ Cf. *Meta.* Θ.8 1049b28-50a15.

³⁰⁰ Cf. especially *EN* II.1 1103a26-b5 and II.4 *passim*.

³⁰¹ Note that Aristotle's arguments in *APo.* B.19 are directed against the view that we have innate intellectual *hexeis*, not *dynamis*. On my view this distinction is extraordinarily important, as I shall argue: we possess the undeveloped *dynamis* of *nous* in virtue of the kind of thing that we are (cf. *de An.* II.5 417a21-27), although it is actually nothing until it thinks (cf. *de An.* III.4 429a24). *Nous-as-hexis* is that which is acquired and developed by first engaging in some kind of intellectual activity and is the topic of *EN* VI.6 and *APo.* B.19. For a contrasting view, see for example Michael Frede, “Aristotle's Rationalism” (1996a): 170 and Gail Fine, *Possibility of Inquiry* (2014): 222-5.

³⁰² Cf. *EN* II.5, where *hexis* is introduced as a disposition with respect to affections, *dynamis* is that in virtue of which we are capable of experiencing the affections. Similarly in *Meta.* Δ.19-20 when

argued that these kinds of *dynamis* also must admit of correspondingly different modes of activity correlative with each stage of development.³⁰³ Finally, I have argued that for learned or developed capacities in general, *dynamis* without qualification is always directed proximately toward some *energeia* without qualification, and that the developed *hexis* is a perfected state of this *dynamis* that is directed toward performing its respective *energeia* in some stable, deliberate, and perfected way. The developed *hexis*, then, is a new capacity only in the qualified sense that it is a capacity for performing the same activity *in a new way*: the novelty here is adverbial, not verbal.³⁰⁴

Beyond this general story there is much to say concerning moral formation, but here I shall, for the most part, set that topic aside.³⁰⁵ But even concerning intellectual formation, so far I have characterized this first or prior intellectual activity in very general terms, so that one's innate and undeveloped capacity of *nous* must come to be active in some unrefined way that is not possible whenever one wishes or when the need arises. In contrast, the further and refined intellectual activity—contemplating (θεωρεῖν) in the most proper, complete, and perfect sense—is coming to be intellectually active in a reliable and correct way whenever one wishes, according to and in virtue of the knowledge one already possesses. In this perfected case the activity proceeds according to a developed state or *hexis* of the intellectual capacity, a capacity which one had all along. In both cases the activity proceeds from that same innate *nous-as-dynamis* (the receptive or potential intellect), but in the second case the capacity itself has come to rest with respect to its own development, having now acquired a certain excellent and virtuous state.

Aristotle considers *diathesis* and *hexis*: *hexis* is a disposition which is well or badly disposed and is a firmer and more stable state than a disposition without qualification. He further argues that all dispositions, including the subclass of *hexeis*, are said in respect of place, capacity, or form. Now, I grant that some *hexeis* will be stable dispositions of a capacity to function *badly*, such as the moral vices or speculative error, but I wish (for the most part) to set these cases aside. My focus will be when such capacities are perfected and have come to rest in the soul *in the right way*, rather than corrupted to some firm yet poor condition. On non-virtuous *hexeis* see Kontos (2014).

³⁰³ Cf. *EN* II.3 and what follows the key passage from *Meta.* Θ.5: the kinds of innate capacities which we come to develop are those which admit of a range in modes of activation or actualization: they can be done well or poorly (as with playing the lyre), to excess and defect (as with activities associated with pleasure and pain), for good or for ill ends (as with the exercise of medical art), or in varying degrees of precision, accuracy, or determinateness (as with intellectual activity).

³⁰⁴ I use “verbal” in the same way as the grammarian speaks of “verbal adjectives,” describing the specific part of speech rather than a mode of expression more generally.

³⁰⁵ In particular, difficulties surrounding the three conditions on (morally) virtuous action Aristotle gives in *EN* II.4, two of which do not hold of craft or theoretical knowledge.

The specification of these intellectual activities and powers therefore differs adverbially, so that perfected intellectual activity is performed correctly, reliably, and deliberately while prior intellectual activity is not. Accordingly, on my account the verbal specification of this intellectual activity remains the same, so that prior intellectual activity must involve a student somehow contemplating and considering the intelligible objects, engaging in the same activity as the expert but in an undeliberate and unrefined way. It is different adverbially precisely because the student lacks in himself the relevant virtue that the expert has: the adverb “grammatically” or in general “as the expert” describes this acquired expertise. So, as an application of my more generic point, I have suggested that the student of the speculative sciences engages in active contemplation of the very objects he is learning, without doing so with the complete or perfected intellectual knowledge of the expert.³⁰⁶

The present dissertation chapter is a defense of the view so applied, fleshing out some of the details of prior activity and learning-by-doing that are specific to the case of intellectual or dianoetic learning and development. There are two applications I shall explore in particular. I begin with a consideration of the activity of contemplation itself, according to which we come to be intellectually identical with some intelligible object. My focus is a remark in *de Anima* III.4 about the identity of knower and known and the grades of potentiality and actuality. Aristotle makes these remarks in the heart of his account of receptive intellect, so I shall apply my more general account of these distinctions in grades of potentiality to his remarks about intellect there. As a foil in this part of the chapter I present Burnyeat’s reading. While he raises an important question for a more intuitive and traditional reading of these lines—indeed, it is a question his opponents do not adequately address—I shall argue that my account of first potentiality and the process of intellectual learning gives us the tools to maintain the more intuitive reading and preserve a fundamental analogy between intellect and perception, even in the face of Burnyeat’s alleged evidence to the contrary.

The second application to the intellectual case concerns the claim at the opening of the *Posterior Analytics*, that all *dianoetic* learning proceeds from preexisting *gnōsis*. Given that prior activity in general is required for developed *hexeis*, this claim at the start of the *Posterior Analytics* seems to specify how dianoetic *hexeis* come to be, not by habituation but by *logos*. It is not immediately clear, however, how the necessity of prior activity fits with this other requirement about preexisting *gnōsis*.

³⁰⁶ I say “intellectual knowledge” to mark that the student here lacks an intellectual virtue; she cannot lack any *gnōsis* at all.

I shall focus on the acquisition of *nous*, by which we are said to grasp the immediate first principles of art and scientific knowledge. The *locus classicus* for Aristotle's account is *Posterior Analytics* B.19 whose dialectic presupposes the principle that all dianoetic learning proceeds from preexisting knowledge.

I end with a consideration of some further consequences of my view when applied to the intellectual case, in particular the idea that the theoretical intellect comes to possess theoretical *hexeis* by engaging in theoretical activities. The chapter as a whole considers the role of these theoretical activities in driving and accomplishing the learning process. In the final analysis we shall see that there are, in fact, two distinct types of prior intellectual activity involved in the learning process, one distinctive to the teacher and the other to the student.

4.1 INTELLECTUAL ACTIVITY IN THE *DE ANIMA*

4.1.1 Intellectual Identity, Activity, and Potentiality

From the *de Anima* alone we have the resources to speak of this generic intellectual activity—both prior and posterior to the acquisition of intellectual *hexeis*—in these broad terms, that the rational subject in each case comes to be identical with some object of thought.³⁰⁷ This intellectual activity is understood throughout *de Anima* III to be analogous in some significant way to the identity that obtains between the sensible object and the sensing subject during actual episodes of perceiving and being perceived.³⁰⁸ This characterization of *theōria* alone, however, leaves much to be desired, and seems rather to be a plausible starting point for an account of intellectual activity than to constitute a substantive account. So here we shall begin, addressing our first set of questions about potentiality, actuality, and activity, before moving on to a more fleshed-out account of these intellectual operations in the case of learning.

³⁰⁷ In addition to the citations in the following footnote, Aristotle also speaks of active knowledge (ἡ κατ' ἐνέργειαν ἐπιστήμη) as being the same as the object (αὐτὸ ἐστὶν...τῷ πράγματι) at III.5 430a20-22 and III.7 431a1-3, though it has been supposed that this may be inappropriately duplicated in one or the other chapter, cf. e.g. Ross (1961) *ad loc.* For a defense, see Hicks (1907) *ad loc.* I shall assume for the sake of the present argument that the line truly belongs in both passages.

³⁰⁸ Cf. III.4 429a13-17, III.7 431a4-8, III.8 *passim*.

There is a bit more we can say on the basis of the *de Anima* about this object of thought, although it remains a preliminary and abstract specification. We can say that the objects of thought are universal, so that the relevant intellectual activity must involve the grasp of universals, at least in some respect. This point may be obscured by the fact that Aristotle makes it only when speaking about the deliberateness of intellectual activity in the case of one already possessing knowledge. Let us recall from *de Anima* II.5:

And perceiving in activity is said to correspond similarly to thinking. But the cases differ because, on the one hand, the objects that are productive of the activity of the former—the visible, the audible, and the rest of the sensibles—are from without. The reason is because perception in activity is of particulars, but knowledge is of the universal, and these are somehow within the soul itself. For this reason it is up to oneself to think, whenever he should wish, but perceiving is not up to him; for it is necessary that the sensible object be present.³⁰⁹

Now, to be sure, someone who possesses knowledge already possesses the intelligible objects, in some sense, within his soul, and as a result is able to contemplate those objects at will. It is likely, given related remarks in III.4, that this possession of the forms is to be equated with the possession of the relevant noetic *hexeis*, the simple grasp of immediate first principles. Indeed, as I have been arguing, Aristotle often exploits the connection between *echein* and *hexis*, so that his use of *echein* often signals something more robust. He goes on to develop his account in III.4:

And whenever it [νοῦς] has come to be each of the things as the knower in activity is said to (and this happens whenever he is capable of being in activity on his own), it is even at that time [each thing] in some way in potentiality, but not in the same way as before he learned or discovered: and at that time it itself is capable of thinking itself.³¹⁰

³⁰⁹ *De An.* II.5 417b19-26: τὸ κατ' ἐνέργειαν [sc. αἰσθάνεσθαι] δὲ ὁμοίως λέγεται τῷ θεωρεῖν· διαφέρει δέ, ὅτι τοῦ μὲν τὰ ποιητικὰ τῆς ἐνεργείας ἔξωθεν, τὸ ὄρατὸν καὶ τὸ ἀκουστόν, ὁμοίως δὲ καὶ τὰ λοιπὰ τῶν αἰσθητῶν. αἴτιον δ' ὅτι τῶν καθ' ἕκαστον ἢ κατ' ἐνέργειαν αἴσθησις, ἢ δ' ἐπιστήμη τῶν καθόλου· ταῦτα δ' ἐν αὐτῇ πῶς ἐστὶ τῇ ψυχῇ. διὸ νοῆσαι μὲν ἐπ' αὐτῷ, ὁπότεν βούληται, αἰσθάνεσθαι δ' οὐκ ἐπ' αὐτῷ· ἀναγκαῖον γὰρ ὑπάρχειν τὸ αἰσθητόν.

³¹⁰ *De An.* III.4 429b5-9: ὅταν δ' οὕτως ἕκαστα γένηται ὡς ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέργειαν (τοῦτο δὲ συμβαίνει ὅταν δύνηται ἐνεργεῖν δι' αὐτοῦ), ἔστι μὲν καὶ τότε δυνάμει πῶς, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὔρεῖν· καὶ αὐτὸς δὲ αὐτὸν τότε δύναται νοεῖν. The manuscripts give us δὲ αὐτὸν here, but Bywater emends the text to read δι' αὐτοῦ so that the line would be rendered

Once knowledge is achieved in the soul in a settled way, as a stable state of the intellectual power, one can contemplate the intelligible objects whenever one wishes. Importantly whatever identity with the intelligible objects obtains for the person who can activate knowledge at will is still potential in some sense, but this is precisely the kind of potentiality we should expect from someone in possession of an intellectual *hexis*, someone at Stage (2) in the Triple Scheme with a fully developed intellectual *dynamis* with respect to some domain. This point should be routine, given the discussion of the Triple Scheme in the preceding chapter.

But, in the context of *de Anima* II.5, the very possibility of telling this story about exercising one's knowledge at will rests upon a more basic claim, that intelligible objects are universals while the objects of sense are particulars. This more basic point about the different character of sensible and intelligible objects can be made irrespective of the distinction between someone already in possession of knowledge and someone yet unlearned; indeed, this is said to be the cause of the different ways in which episodes of thinking and sensing are activated. So, while the universal character of intelligible objects explains something interesting about those already in possession of knowledge, the general point still holds even for those who are yet to possess that knowledge. The objects of thought are universal quite generally, for the unlearned and the learned alike.

In a similar way, the *de Anima* often speaks of the objects of thought as “forms” and the intellect as “the place of forms” or the “form of forms.”³¹¹ With these passages we also come up against a similar complication, since the intellect is the place of forms most properly in the case of one already in possession of knowledge. The unlearned person who is engaged in prior intellectual activity comes to be identical with those forms without yet possessing them, as the Scholastics would say, *habitually*.³¹² It turns out, on my reading, that one could come to be intellectually identical

“and at that time he himself is capable of thinking by himself,” that is, upon his own initiative. While I think this is entirely consistent with what Aristotle says in II.5 and in this very passage concerning the person in possession of knowledge, I am not convinced that the line needs to be changed. Especially considering the question that follows at 429b26: “And further [someone might raise the puzzle] whether nous itself is intelligible” ἔτι δ' εἰ νοητὸς καὶ αὐτός;

³¹¹ Cf. *de An.* III.4 429a28 and III.8 432a3, respectively.

³¹² See the discussion in the previous chapter about the Scholastic use of *habitus* to render *hexis*. Here, using present-day conventions, *habitualiter* might be best rendered not as “habitually” but perhaps rather “as a stable state.” It is important, however, to recall that this talk does not imply *habituation* (ἔθος) which is a mode of acquisition and development proper to the moral or ethical case. This is an unfortunate ambiguity in English. “Possess habitually,” on my reading, is how we ought to

with an intelligible form without thereby possessing it as a *hexis*, just as one could do some temperate thing without this action proceeding from or even immediately resulting in a firm ethical state, the virtue of temperance.³¹³ We must be careful, then, since the intellect is the place of forms in two respects: it is the place of many forms potentially, being capable of different species of knowledge (ἐπιστήμῃ), but it is also the place of any one of those forms actually and in the fullest sense whenever any one of those intelligible forms should come to be the object of a given act of contemplation. We can therefore contemplate and indeed *become* the universal intelligible form of elephant without possessing or even immediately coming to possess this form habitually (i.e. as a *hexis*).

Thus, on the picture I have been urging, the prior intellectual activity of one who is learning involves, at minimum, coming to be identical with the objects of thought, which are in some relevant sense said to be both forms and universals. Although the unlearned person does not yet possess (ἔχειν) these forms or universals when engaged in prior intellectual activity (for that is what distinguishes the person with the *hexis* of knowledge from the person who lacks it), nevertheless in virtue of engaging in this prior intellectual activity the student comes to be actually identical with these intelligible objects. It is this intellectual activity, whether prior or posterior to the possession of knowledge, which is analogous to the perceptual activity whereby perceivers come to be the same as the respective perceptible objects. But unlike the perceptual case, the receptive intellect must admit of activity that precedes and perfects its own development as a capacity. So that, for the unlearned person who is contemplating in order to learn, these intelligible objects come to be in the soul without necessarily coming to rest there as a result.

4.1.2 A Potential Complication

Now, as we have seen, Aristotle's analysis of intellect depends at every turn on an analogy with perception, while conceding that intellect is distinctive and can reach beyond what sense can grasp. In this section I consider the analogy between intellect and sense with respect, on the one hand, to the identity between the perceiving or knowing subject and the object perceived or known and, on the other hand, to the varying grades of potentiality and actuality Aristotle develops throughout the

understand Aristotle's use of ἔχειν in these passages, which, as we have seen, often implies a more robust "having" that corresponds to the robustness a *hexis* or *habitus* rather than a transient having.

³¹³ Cf. *EN* II.4 *passim*. Also consider the idea that a single good act does not make a person good.

de Anima (my focus in the preceding chapter). Indeed, the *energeia/dynamis* distinction that we have been considering seems to be particularly suited for the perceptual and intellectual cases, intricately bound up with the special kind of intentional identity proper to both perception and thought. This is recommended by both passages we have just seen, *de Anima* II.5 and III.4, and perhaps especially the latter, whose account of intellect begins by stating a basic analogy between intellectual activity and perception.³¹⁴

It is clear and commonly agreed that the identity of perceiver and thing perceived occurs at the stage of full activity, at the level of exercise of a developed perceptual capacity. According to a default reading of these two cases, thinking is straightforwardly analogous to perceiving in this regard: the identity between knower and object known is achieved at the level of intellectual activity, most clearly with the exercise of some developed intellectual capacity, but perhaps not only then, as we saw in the preceding section. Burnyeat, however, has challenged this reading, citing the passage from III.4 as a “proof text which shows unambiguously that that is wrong.”³¹⁵

When the intellect becomes each thing in the way in which an actual knower does (*which happens as soon as the knower can exercise their power of their own accord*) even then it is still in one sense just a capacity: not, however, a capacity in the same sense as before it learned or discovered.³¹⁶

This is the same passage from *de Anima* III.4 mentioned above, though I have given Burnyeat’s own translation. Of course, I concede that there are disanalogies between the two cases, but Burnyeat insists that the disanalogy reaches to the very ontological relations of potentiality and activity in the following way: on his view, the identity of subject and object is achieved at the level of activity in perception but at the level of *hexis* in intellection. This would be a surprising disanalogy given what we have seen so far. I take it that we should avoid attributing this disanalogy to Aristotle if possible, given everything in favor of a default and analogous reading from other passages.

According to Burnyeat, then, this passage confirms that the knower who is learned and in possession of knowledge has already achieved intellectual identity, which identity goes on to guide acts of contemplation in activity. While I concede that this passage concerns the knower in possession of knowledge, who has in some sense already become one-in-form with the objects of

³¹⁴ Cf. *de An.* III.4 429a10-18.

³¹⁵ Burnyeat *Aristotle’s Divine Intellect* (2008): 22.

³¹⁶ *De An.* III.4 429b5-9 (tr. Burnyeat after Hicks and Hamlyn, emphasis his); in Burnyeat (2008): 23.

his knowledge, I disagree with Burnyeat's reading of "when the intellect becomes each thing." Instead, I offer another interpretation of this passage in defense of the basic analogy between perception and intellection. On my view, the fully actual identity of knower and known is still achieved at the level of activity, just as in the perceptual case; the relevant disanalogy between the identity achieved by sense and intellect concerns differences in the development of natural and acquired capacities. As we saw in the preceding chapter, intellectual capacities are developed by and through their exercise, so that intellectual identity is achieved at the level of activity *before* to the acquisition and possession of knowledge.

Before addressing Burnyeat's view, I note the two disanalogies between sense and intellect about which Aristotle is quite explicit in *de Anima* II.5 and on which most everyone agrees:

The first change of the perceptive [animal] comes about from the male parent, and whenever it has been begotten it already has the ability to perceive, just as when [the intellectual being] possesses knowledge. And actual perceiving corresponds similarly to thinking. But the cases differ: on the one hand, the objects that bring the sensitive power to actuality, the visible, the audible, and the rest of the sensibles, are from without. The reason is that actual perception is of particulars, but knowledge is of the universal, and these are in some way within the soul itself. For this reason someone can think under his own power, whenever he wishes, but cannot perceive under his own power— for it is necessary that a sensible object be present.³¹⁷

Indeed, this very text is echoed later in Burnyeat's alleged proof text in III.4.

Rather than coming to be by a process of learning or teaching, perceptual capacities develop by nature, and for Aristotle this is brought about by the action of the parents in early embryological development.³¹⁸ Thus we are born with perceptual capacities already at a developed stage, even though our intellectual capacities are only at first potentiality.³¹⁹ We must come to be knowers at a developed stage throughout life as a result of learning. Thus every human's perceptual development is accomplished by the ordinary and natural process of generation, which process supplies a fully developed capacity for perceiving; things are not so for our intellectual faculties. This important

³¹⁷ *De An.* II.5 417b17-26.

³¹⁸ I wish to set aside the complicated details of animal generation here, and simply reflect on what Aristotle explicitly says in this context: whenever an animal is generated, the perceptual faculty is said to be already present.

³¹⁹ Recall the argument of the previous chapter: first potentiality has no analogue in the natural case.

disanalogy between intellect and perception should be familiar and routine, given the discussion of the preceding chapter.

Aristotle articulates a second difference in the above passage, and in even clearer terms: the objects of sense are purely external and particular, while intelligible objects are universal and, in a sense, already within the soul itself. The structure of the argument is interesting: the fundamental difference in the character of each class of object grounds the distinction between how each capacity is actualized. As a result, perceptual activities cannot occur without the prompting of an external perceptible object, while episodes of thinking can occur at will, at least for the person already in possession of knowledge. As we have seen, however, this special character of the objects of thought holds whether someone has already learned or not.

While noting these two differences, Aristotle clearly establishes a general analogy between perception and thought. The developed perceptual capacity is paired schematically with the possession of knowledge, though the former arises by nature as a result of the process of generation and the latter is acquired throughout life as a result of learning. Furthermore, active perceiving is paired with the exercise of knowledge, though the former activity requires the prompting of an external object while the use of knowledge can occur at will. According to a default reading of these passages, the intellectual case is directly analogous in this respect: the intellectual identity of intellectual subject and intelligible object constitutes the exercise of intellectual capacities, and the having of such capacities is constituted by the ready ability to achieve this intellectual identity.³²⁰ According to this reading, we should expect identity to fit into our schema in this way:

Figure 5. The Default Reading of *de Anima* III.4

STAGE	APPLICATION TO PERCEPTION	APPLICATION TO INTELLECT
Stage 2 <i>Hexis</i>	Developed perceptual capacity/ Potential identity with perceptibles	Developed intellectual capacity/ Potential identity with intelligibles
Stage 3 <i>Energieia</i>	Actual identity with perceptibles (=Active perceiving)	Actual identity with intelligibles (=Active thinking)

³²⁰ In accordance with the argument of the preceding chapter, I want to say that both first and second potentiality knowers are capable of engaging in this intellectual activity. It is “zeroth” potentiality which is properly analogous to whatever stage precedes the development of perceptual capacities.

So, the activity of perception and thought is achieved by actual identity between subject and object: formal identity with the object is simply a description of what it means to exercise perceptual and intellectual capacities.

Unfortunately for the default reading, however, Burnyeat points to a passage that suggests a more complicated story. Burnyeat’s contention is that Aristotle unambiguously introduces a third disanalogy beyond the other two in *de Anima* III.4, one which frustrates and complicates this more straightforward picture. He cites this alleged proof text as evidence for the claim that, in the intellectual case, identity with the object has already been achieved at stage (2) in a way analogous to perceptual identity at stage (3). That is to say, according to Burnyeat’s view, every knower at stage (2) must have already achieved intellectual identity *simply in virtue of possessing the hexis*, and further this identity persists in the knower as long as the habit of knowledge is maintained.³²¹ According to his Complicating Reading, formal identity in the intellectual case is conceptually tied to the *possession* of knowledge, and unlike the perceptual case is not essentially tied to its exercise:

Figure 6. The Complicating Reading of *de Anima* III.4

STAGE	APPLICATION TO PERCEPTION	APPLICATION TO INTELLECT
Stage 2 <i>Hexis</i>	Developed perceptual capacity/ Potential identity with perceptibles	Developed intellectual capacity/ <i>Actual identity with intelligibles</i>
Stage 3 <i>Energeia</i>	Actual identity with perceptibles (=Actual perceiving)	Actual identity with intelligibles <i>has already been achieved above, and now guides actual thinking</i>

In this way, Burnyeat concludes, “the identity of intellect with its object holds already at second potentiality = first actuality, *before* the knower switches to the second actuality of exercising that intellectual power of their own accord.”

There are some preliminary reasons for finding Burnyeat’s Complicating Reading unsatisfactory and thereby for preferring the simpler straightforward reading. By linking intellectual identity with the possession of knowledge and not its exercise, Burnyeat leaves unanswered two

³²¹ Perhaps due to forgetfulness or related phenomena the possession of knowledge, and therefore its attendant identity with the object known, could be lost.

important and related questions about his own account: what intellectual potency remains yet to be actualized in the transition from the stage (2) to stage (3), and furthermore how do we characterize the activity that occurs at stage (3) in active episodes of thinking, above and beyond the identity of knower and known that, on his view, was already achieved at stage (2)?

So far we have come to understand the activities of thought and perception alike according to the model of identity, so that they are both exercises of capacities for formal identity, issuing in the subject coming to be the form of some object in some relevant respect. Formal identity is, at least *prima facie*, simply a description of how the activities of perception and thought are to be conceived, on Aristotle's view at any rate. The activity of seeing is the exercise of a capacity for receiving the colored form of a visible object, issuing in episodes of becoming ourselves visually informed by its color.³²² And the case of intellect holds similarly, being either the same or something else of a similar sort.³²³ If instead actual identity is achieved already at the level of developed intellectual capacities and is conceptually linked with the *possession* of knowledge and not its exercise, then the model of formal identity would no longer be useful in characterizing the paired activity of thought, in specifying *what it is to be* thinking. If Burnyeat is right about this disanalogy, it is incumbent upon him to give a descriptive account of what occurs when knowledge is put to use.

There is a further and related difficulty: if intellectual identity is already achieved at stage (2), what potency remains to be actualized in active episodes of thinking? How are we to characterize the actual identity of knower and known at stage (2) so that there remains some further potentiality for contemplation that remains yet to be actualized in activity? Indeed, Burnyeat's alleged proof text itself mentions a potency still remaining at stage (2). On the one hand the answer is simple: the potency that remains is for the activity of thinking, which comes about at will. On the other hand, as just mentioned, Burnyeat's complication robs us of the standard means to describe what this activity might be—we can no longer lean on the model of formal identity in this regard. Both of these problems arise from locating the actual identity of knower and known at the second stage, conceptually tying intellectual identity to the possession of knowledge rather than to its exercise.

This pair of problems is not all that rings off key here. Burnyeat's reading dislodges the analogy with perception on precisely the point for which the analogy seems to have been introduced.

³²² Again, with the relevant qualifications. My thesis and line of argument is intended to be neutral on the Sorabji/Burnyeat question of the nature of perceptual affection.

³²³ Cf. *de An.* III.4 429a10-18.

In the perceptual case it is in exercising one's perceptual capacities that the perceiver has taken on the perceptible form of an object, that her perceptual faculty has come to be identical with some object (in the relevant respect). This is an unsurprising description of perceptual operation that Aristotle seems to exploit in explaining the nature of intellectual activity: the actual identity in both perceptual and intellectual cases seems to be conceptually linked with the exercise of some capacity, be it perceptual or intellectual. And this is how the default and straightforward reading takes things. In the perceptual case Burnyeat wants to agree with this analysis, but his conception of the intellectual case is different, as we have seen. And yet, if the application of the model of identity can shift so radically between the two cases, what remains of the analogy between the two cases? We might echo Burnyeat's own words against him, albeit now in a different argumentative context: "I suggest that those who insist" that intellectual identity does not define intellectual activity, just as perceptual identity defines perceptual activity, "owe us an explanation of why Aristotle should tolerate such a significant lack of parallelism between the two types of cognition whose parallelism he trumpets both in the passage just quoted and elsewhere (III 4, 429a13-18)."³²⁴

These considerations give rise to a rather difficult dilemma for Burnyeat so long as he locates intellectual identity at stage (2). On the one hand, he could admit that the model of identity is sufficient as a description of perceptual activity, conceptually linking perceptual identity with stage (3) perceptual activity, while nevertheless holding that the model is insufficient for explaining intellectual activity. But then it becomes difficult to see how anything would remain of even the broadest analogy between sense and intellect, and this would even make it strange to speak of intellect in terms of identity at all. On the other hand, he could maintain the general analogy between sense and intellect, but this would require him to dislodge the conceptual link between perceptual acts and achieved formal identity, inviting further explanation as to how the model of identity might apply every time it comes on scene. In either case his Complicating Reading forces us to give up something dear in our account of intellect, either the model of identity or the analogy between intellect and sense. In other words, while the earlier two disanalogies can be admitted without undermining the analogy between sense and intellect in general, it is difficult for the Complicating Reading to save any meaningful analogy between the two cases at all.

With respect to these questions I should note that Burnyeat does not deny that formal identity between knower and known is relevant to episodes of actual thinking; indeed, he concedes

³²⁴ Burnyeat (2008): 22.

that “the form already acquired is then actively guiding the knower’s thought.”³²⁵ He is motivated both by his alleged proof text and by the idea from II.5 that “knowledge is of the universal, and these are in some way within the soul itself.”³²⁶ It is true that in some sense the intelligible form is said to reside habitually in someone who possesses knowledge, but it is not obvious what this habit (ἔξις) amounts to in detail. Burnyeat takes for granted that if the intelligible form is “in the soul” in any way at all, that it must reside there as an actual and already achieved intellectual identity with the intelligible object. In both passages, however, Aristotle qualifies what he says with “in some way,” using the same Greek word (πως): if it is possible to interpret this qualification in several different ways, we ought to interpret it so as to minimize tension with Aristotle’s other commitments.

4.1.3 Avoiding the Complication

Now that we have seen some of the unsatisfying consequences of Burnyeat’s Complicating Reading I propose my own alternative, beginning with a detailed discussion of the passage in question:

[Greek] ὅταν δ’ οὕτως ἕκαστα γένηται ὡς ὁ ἐπιστήμων λέγεται ὁ κατ’ ἐνέργειαν (τοῦτο δὲ συμβαίνει, ὅταν δύνηται ἐνεργεῖν δι’ αὐτοῦ), ἔστι μὲν καὶ τότε δυνάμει πως, οὐ μὴν ὁμοίως καὶ πρὶν μαθεῖν ἢ εὐρεῖν.³²⁷

[Burnyeat tr.] When the intellect becomes each thing in the way in which an actual knower does (*which happens as soon as the knower can exercise their power of their own accord*) even then it is still in one sense just a capacity: not, however, a capacity in the same sense as before it learned or discovered.³²⁸

[Buttaci tr.] And whenever it [νοῦς] has come to be each of the things as the knower in activity is said to (and this happens whenever he is capable of being in activity on his own), it is even at that time [each thing] in some way in potentiality, but not in the same way as before he learned or discovered.³²⁹

³²⁵ Burnyeat (2008), 23.

³²⁶ *De An.* II.5 417b23-24

³²⁷ *De An.* III.4 429b5-9. This text is what Burnyeat prints following Hicks, including punctuation.

³²⁸ *De An.* III.4 429b5-9 (tr. Burnyeat after Hicks and Hamlyn, emphasis his) in Burnyeat (2008) 23.

³²⁹ *De An.* III.4 429b5-9 (my translation).

I concede to Burnyeat that his proof text in fact establishes the following claim, broadly understood:

(i) Knowers at stage (2) have already achieved intellectual identity with their objects.

This is an important claim, and Burnyeat is right that it has not been fully appreciated or explained by those who prefer the default reading.

He goes on, however, to interpret the claim in the strongest possible terms, so that the gloss “already” is read in a conceptual and persisting sense:

(ii) All knowers at stage (2) are, simply in virtue of possessing knowledge, already identical with their intelligible objects just as perceivers are at stage (3).

As I outlined above, there are serious reasons to be uncomfortable if (i), in fact, implies Burnyeat’s stronger reading in (ii). The second claim is stronger because it insists that intellectual stage (2) and the possession of knowledge is constituted by a persisting identity of subject and object—even when the knower is not actually contemplating anything—that is analogous to the perceptual identity that obtains only during episodes of perceptual activity. Again, Burnyeat is surely right that this passage raises a question for the default view, so that those who insist on an analogy between perceptual and intellectual cases at stage (2) and (3) must explain what Aristotle could mean in these lines. Given the argument of the preceding chapter, I have a reply that is unavailable to those who wish to save the default reading, but who otherwise adhere to the Standard View of the Triple Scheme. Claim (i), derived straightforwardly from the alleged proof text, may not necessarily imply this robust intellectual identity at stage (2), but might simply mean that possession of knowledge *in some way* presupposes identity with the intelligible object. This is to say that claim (ii) is not the only possible way to read the passage and interpret claim (i), and it may even turn out to be the less likely reading.

Burnyeat notes that his translation follows Hamlyn and Hicks, and yet he departs from them both in how he translates the operative verb. They and I alike translate γένηται as an English present perfect, “has become,” while Burnyeat opts for the English present, “becomes.”³³⁰ In so translating Burnyeat has masked an ambiguity in the Greek: “whenever the intellect becomes” implies a persisting state throughout the action of the main clause. On the other hand, the English

³³⁰ Hicks (1907): 483-4, where he takes the identity to be achieved in “actual operation.” Hamlyn (2002): 58: “When the intellect has become each thing in the way that one who actually knows is said to [...]” Commenting on the line on p. 137: “The point of the last sentence is to distinguish between the intellect as a mere *dunamis* and the intellect as a *hexis*, between the capacity for thought that a child has and that which a trained thinker has (v. on 417a21 and 417b16).” Hamlyn refers to sections of his translation from *de An.* II.5, and not to those particular lines only.

“whenever the intellect has become” maintains a certain ambiguity as to the present state: it is not clear whether the intellect which “has become” some object persists in being identical with it throughout the action described in the main clause, or not.

The Greek verb is an aorist subjunctive introduced by ὅταν (“whenever”), marking an indefinite temporal clause. In moods other than the indicative, and especially in indefinite temporal clauses, the aorist tense indicates a simple or completed aspect more than past time.³³¹ It follows that ὅταν γένηται can be translated into English either way, as a simple present or as a present perfect.³³² The Greek aorist within an indefinite temporal clause indicates a completed rather than a continuing action with respect to the main clause. In this respect there is some affinity between the Greek aorist and the English present perfect. I want to suggest that the English present perfect more accurately reflects the Greek aorist in this context, leaving open whether the coming to be identical with the object persists, or not. The aorist aspect implies a completed action whose effects do not necessarily continue as a persisting state at present time; this is the fundamental difference between the aorist and perfect aspects in Greek. For example, the aorist is not typically used to express someone having died; instead, the perfect is used, since the completion of the action (or, if you will, passion) of dying results in the persisting state of death.

One might even be tempted to conclude that Aristotle’s preference for the aorist rather than the perfect is evidence enough against Burnyeat’s translation and reading, arguing that if Aristotle intended intellectual identity to remain as a persisting state he would have used a perfect rather than an aorist verb. My argument is not that easy, however, since I concede that the perfect is rarely used in the subjunctive mood and is often replaced by the aorist, particularly in indefinite temporal clauses.³³³ Thus the aorist γένηται is even more ambiguous because of its mood and syntactic context: the (im)permanence of result is entirely undefined on grammatical grounds alone. The lesson here is that the English perfect has a broader range than the Greek perfect and can capture a simple past completed action without regard to permanence of result. And given what we know about the Greek aorist replacing the perfect in moods outside of the indicative, the aorist here

³³¹ Cf. Smyth § 1850-1860, 1923-1951, 2399-2400.

³³² The English simple past (“whenever the intellect became”) and past perfect (“whenever the intellect had become”) will not do, because even in indefinite temporal clauses our past tenses express past time; not so for the Greek aorist. It is also clear that the English future and future perfect will not do, since they do not capture completed action.

³³³ Cf. Smyth § 1860, 2400

describes the same sort of completed action and maintains the same sort of ambiguity with respect to the permanence of result as the English present perfect.³³⁴

For the specific context of our passage, then, the English present perfect more closely approximates what is expressed by the Greek aorist verb, including its perhaps frustrating ambiguity on such a crucial point. So when we translate γένηται as “has become” in English, we must note well that the Greek does not necessarily imply “has become *and remains being*,” as we are accustomed to hear whenever the perfect tense is used in Greek. Burnyeat’s argument is therefore shaken in some measure by this lesson: by taking the passage as a proof text and inferring claim (ii) from claim (i), he must think that ὅταν γένηται should be read to mean “whenever the intellect has become *and remains being* each thing,” so that the formal identity between knower and thing known persists as a permanent state during the action of the main clause, namely in the knower at stage (2). This reading of Burnyeat is strongly suggested by his translation “when the intellect becomes,” suggesting in English the permanence of result. While I admit that ὅταν γένηται could be translated in this way and could imply a persisting and permanent state, we must be careful not to insist that the text *must* mean this. Accordingly, his own translation of the alleged proof text biases things in favor of his argument, placing into jeopardy the passage’s claim to being a proof text at all.

In the light of these considerations, I suggest that a weaker alternative to (ii) is entirely possible on textual grounds as a gloss of (i) and as an interpretation of the passage as a whole:

(iii) All knowers at stage (2), in virtue of having knowledge, have already become identical with intelligible objects previously, though this identity need not persist.

The relevant difference between (ii) and (iii) can be summed up as a difference in what “already” is taken to mean in the original claim (i): in (ii) “already” is read with a Greek perfective sense, so that the prior intellectual identity that has been achieved persists as a permanent result, being conceptually located at intellectual stage (2) with the possession of knowledge; in (iii) “already” is read with a merely temporal and Greek aorist sense, so that some prior intellectual identity has been achieved but need not continue as a persisting state at stage (2), and therefore does not define what it means to be in possession of knowledge. On my reading, in short, the possession of knowledge

³³⁴ The obvious difference between the English perfect and Greek aorist is that the aorist can capture specified as well as unspecified past time, whereas the English perfect is only used of unspecified time. This is irrelevant in this context, however, because the Greek aorist is embedded within an indefinite temporal clause, so specified time is not expressed by the aorist here. Thus the English perfect can translate the Greek aorist in this context without grammatical remainder.

presupposes but is not constituted by this actual intellectual identity. I grant that the grammar of the text itself leaves undetermined whether this identity persists as a permanent state, but that ambiguity is sufficient for this step of my argument. If the text is ambiguous in the way I have been urging, then it can nowise serve as “the proof text which shows unambiguously” that I and many others are wrong.³³⁵

Given the argument of the preceding chapter, however, we have independent reason to interpret the passage along the lines in (iii) rather than in (ii). As a general point about the developed capacities, both moral and intellectual, *hexeis* are developed by engaging in prior activity. Since knowledge is developed by engaging in prior intellectual activity, and since intellectual activity (both prior and perfected) is understood on the model of identity between intellectual faculty and intelligible object, we can conclude that it is by coming to be intellectually identical with the nature of elephants that one comes to possess knowledge of elephants. Therefore, we have the resources to avoid entirely the disanalogy that Burnyeat proposes for us by applying the generic lesson of the preceding chapter to our reading of this passage from *de Anima* III.4: of course the person in possession of knowledge will have already become identical with the intelligible objects, since the person in possession of knowledge will have already engaged in the activity of thinking about those very objects of knowledge.

Moreover, the relevant disanalogy between perception and intellect is the one that Aristotle explicitly mentions in II.5, that perceptual capacities develop in the ordinary course of nature while intellectual capacities must develop through prior activity. Burnyeat is right that this passage in III.4 is suggestive of something important to Aristotle’s account of intellect. On my view, however, this passage serves as a confirmation of my account of the Triple Scheme given in the preceding chapter: it is an important point of friction where we see hints of Aristotle’s idea that we develop *hexeis* of intellect by engaging in the *activities* of intellect, by becoming intellectually identical with intelligible objects.³³⁶

³³⁵ Burnyeat (2008), 22.

³³⁶ On this point, see a passage from Alexander’s *de Anima*: “So, when we come to be, we immediately have singly that intellect called both “potential” and “material,” as we have said, but the intellect’s being in activity and the *hexeis* of these we acquire later on account of daily teaching, of which *hexeis* the intellect comes to be receptive as a result of the activity, and we acquire the theoretical intellect as a result of the activity of theorists” (τὸν μὲν οὖν δυνάμει τε καὶ ὑλικὸν νοῦν καλούμενον ἐκάτερον ὡς εἶπον εὐθὺς ἔχομεν γινόμενοι, τοὺς δὲ κατ’ ἐνέργειάν τε ὄντας καὶ ἔξεις τούτων ὕστερον κτώμεθα διὰ τῆς καθ’ ἡμέραν διδασκαλίας, ἧς γίνεται δεκτικὸς ἐκ τῆς

Finally, Aristotle says that someone must have become the objects *as the knower in activity is said to* (ὡς ὁ ἐπιστήμων λέγεται ὁ κατ' ἐνέργειαν). In order to interpret things the way Burnyeat has, he must read this line as saying: “When the intellect becomes each thing in the way in which an actual knower does, *which is to say, the person in possession of knowledge.*” It is true that Aristotle will often refer to the person in possession of knowledge as an actuality (ἐντελέχεια), but in those contexts he denies that the possession of knowledge is as such an exercise or activity (ἐνέργεια).³³⁷ As a final point against Burnyeat’s Complicating Reading, then, we should not think of the intellectual identity mentioned in the first line of his passage to be a persisting state of knowledge corresponding to stage (2), but rather the knower who is said to be in activity at stage (3). After all, the knower whom Aristotle mentions here is not one in actual possession of knowledge, but the one who is in activity (ὁ κατ' ἐνέργειαν). So, in view of the argument from chapter three, the analogy with perception can be preserved.

We can therefore see one fruitful application of the work of the preceding chapter to an interpretive controversy concerning intellect. While there are surely many other issues to be considered regarding this intellectual identity, I suggest that they lie downstream of a basic appreciation of the distinctions in potentiality, actuality, and activity that seem to be operative throughout Aristotle’s account of soul, perception, and intellect. I have argued that it is crucially important to appreciate the prior activity of the student’s own receptive intellect in the process of intellectual learning. However, this cannot be the entire story: in the generic account of the preceding chapter the teacher played a substantial role in guiding and shaping the student’s prior activity. But so far I have said little about the teacher’s contribution. The balance of the chapter will be to work toward saying more about the teacher’s contribution in the case of intellectual learning.

ἐνεργείας, τὸν δὲ θεωρητικὸν ἐκ τῆς τῶν θεωρητῶν). This passage was said to be “out of context” and even “unintelligible” by Fotinis (1984) 106; he prints the bit about being receptive as a result of activity, but between asterisks. He does not even print a translation of the final seven words of the passage, however. On my understanding of the lessons of the preceding chapter as applied to theoretical intellect, this passage is eminently intelligible.

³³⁷ Cf. *de An.* 417b12-16, esp. 13: λαμβάνον ἐπιστήμην...ἐντελεχεία. See also *de An.* 412a10-11, 21-26, esp. 26: ἔχειν καὶ μὴ ἐνεργεῖν.

4.2 INTELLECTUAL ACTIVITIES IN THE *POSTERIOR ANALYTICS*

This is perhaps as much as we can say on the basis of the *de Anima* alone about intellectual activities, and so we find ourselves looking elsewhere in the *corpus* for a more detailed specification of what this prior intellectual activity might involve, and how a teacher might give it shape. One passage outside of the *de Anima* which seems to be especially relevant to the development of intellectual *hexeis* is *Posterior Analytics* B.19. I note at the outset that this passage focuses on scientific knowledge and *nous* neither as unqualified powers nor as activities of the soul, but rather as states (ἔξεις) and virtues (ἀρεταί).³³⁸ And yet, it is precisely these intellectual *hexeis* which the subject of our inquiry lacks: the person who in the process of learning engages in some prior intellectual activity without yet possessing these intellectual *habits* (as they might be called according to one sense of that term). The ultimate aim of this chapter is to understand the prior intellectual activities involved in the development of these intellectual *hexeis*, and so this section focuses on the acquisition of first principles.

4.2.1 Prior *Energeia* and Preexisting *Gnōsis*

Let us turn, then, to the *Posterior Analytics*, in particular with its treatment of induction and acquisition of first principles in B.19, a passage with which this dissertation project began. My general approach so far has been to discuss the process of learning in terms of some prior intellectual activity, an approach first recommended by what I have been calling Aristotle's Learning Principle. We have seen that Aristotle says little about the character of the intelligible object beyond it being an essence, a form, and a universal; we also know little about the character of the intellectual activity beyond an immaterial identity between the subject and the intelligible object, an identity that is somehow analogous to the activity of perception. So, as a preliminary specification, the *prior* intellectual activity through which learning comes about must involve in some way contemplating and coming to be intellectually identical with those objects of thought—albeit in an undeliberate and unrefined way—in order to acquire an intellectual *hexis* that is directed toward contemplating that very same intelligible object in a more refined and deliberate way.

³³⁸ I note that the use of *hexis* in *de An.* III.5 is different than the use of *hexis* in this context. For a contrasting view, see Lesher (1973).

However, those familiar with the *Posterior Analytics* know that there Aristotle speaks in terms of preexisting knowledge or cognition (γνώσις), that is, how new intellectual *hexeis* come to be not from prior activity but rather from other previously achieved cognition.³³⁹ Aristotle’s entire account of demonstrative scientific knowledge starts from this principle. And indeed, in B.19 part of the strategy is to show how noetic *hexeis*, by which we grasp the universal first principles both of art and of scientific knowledge, also come to be from an innate cognitive capacity for perception. So as I begin an appeal to the *Posterior Analytics* to flesh out my account of prior intellectual activity, someone familiar with these passages might rightly ask: “Why speak of prior *intellectual* activity, that is, activity of *nous* itself when undeveloped, if Aristotle seems to be happy to speak of the prior activity of lower level human cognitive capacities, most notably of perception?”

From the outset I surely must admit that all dianoetic learning proceeds from preexisting knowledge or cognition (γνώσις).³⁴⁰ So part of what the objector says is true enough: Aristotle says that learning requires the prior activity of lower level cognitive capacities. But this alone would be insufficient to effect *intellectual* learning. We saw in the preceding chapter that the student must already be engaged in the unified activity of the expert. The person who is *just* laying bricks can only ever learn to lay bricks. The person who is *just* playing a piano sonata with his right hand can only ever learn to play that hand’s part. A conclusion of the preceding chapter was that we learn by doing the very things we are learning to do, so that in order to learn to play a piano sonata, at some point in his development he must practice the piece with both hands together. Similarly with intellect,

³³⁹ This is particularly interesting given how Aristotle puts this same principle in the ethical treatises (EN VI/EE V ch. 3) in participial terms: “All teaching is from things previously cognized, just as we said also in the *Analytics*” ἐκ προγινωσκομένων δὲ πάντα διδασκαλία, ὥσπερ καὶ ἐν τοῖς ἀναλυτικοῖς λέγομεν (1139b26-7). When expressed with a participle of the compound verb *progignoskein* it recalls the analogous cases of *proenergein* and *energein proteron*, discussed at length in the previous chapter. Of course, my argument is that *progignōskein* and *proenergein* can imply two different kinds of prior activity. Nevertheless, there is an undeniable likeness between the expressions.

³⁴⁰ Cf. *APo.* A.1. For the sake of argumentative clarity, as with some other common Greek terms, I shall ordinarily leave *gnōsis* untranslated. There is an important question about the normative character of the word, whether it is truth-entailing or not. In the former case we might translate it best as “knowledge,” while in the latter case we might best render it “cognition.” I am of the opinion that *gnōsis* in Greek probably had a more neutral sense but Aristotle sometimes uses it in a distinctively truth-entailing way, and that this creates a difficulty for the translator: should we build into our translation the more common meaning that Aristotle’s use presupposes, or do we exhibit the distinctive meaning that his distinctive use gives to a word that was otherwise not universally so used?

since the relevant expert activity in this case is an *intellectual* identity, the student must—at some point in his development—come to be intellectually identical with the objects about which he is learning. If only perceptual capacities were operative in him, then only perceptual *hexeis* could ever result.

Furthermore, this requirement of preexisting *gnōsis* is carefully qualified so as to apply not to every case of learning, but only to *dianoetic* learning. A preliminary question arises regarding the purpose of including this qualification on learning in the statement of the principle. One may reasonably suppose, given Aristotle’s eventual solution in *Posterior Analytics* B.19, that this qualification was necessary to avoid a regress in preexisting *gnōseis*: if we are to avoid a regress, the process of acquiring the perceptual *gnōsis*—the one from which properly noetic or inductive learning proceeds—cannot *itself* presuppose still another *gnōsis*, and so on.³⁴¹ That is, on pain of regress, whatever perceptual process produces the *gnōsis* from which induction proceeds must not fall under this principle. Thus the qualification is necessary, in the first place, to differentiate dianoetic learning from what we might call merely *perceptual* learning. This surely fits with the overall argument of the treatise: commentators from Aquinas to Barnes read the qualification in this way, and they are surely right.³⁴² But this is not the full significance of Aristotle’s claim about *dianoetic* learning.

I have argued in the preceding chapter for an account of first potentiality and of the Learning Principle that are generic enough to accommodate all kinds of learning, both moral and intellectual, informed by the idea that Aristotle clearly regards prior activity as necessary for all kinds

³⁴¹ I use “noetic” throughout to refer to the *hexis* of *nous* in the narrow meaning, i.e. to the acquisition and grasp of first principles; I use “epistemic” to refer to the *hexis* of *epistēmē* in the strict sense. This qualification is especially important as Aristotle speaks most carefully and strictly when speaking about these things as *hexeis*. When discussing the power of *nous* in the *de Anima*, namely that potentiality or power which even the unlearned person has, Aristotle leads us to conclude that this is the power of the soul in virtue of which humans are said to have any number of the intellectual virtues, since it is that by which our souls cognize (γινώσκει), reason (φρονεῖ), think (διανοεῖται) and suppose (ὑπολαμβάνει) (*de An.* III.4 429a9, a23). Indeed, the same power is also said to have both theoretical and practical exercises (Cf. *de An.* III.10 433a13ff.). Importantly, Aristotle carefully avoids denying these *powers* of the unlearned person; as we have seen, what the unlearned person lacks are the developed *hexeis*, not the potentiality of *nous* without qualification.

³⁴² Aquinas *ad loc.* (tr. Larcher): “First, he asserts a universal proposition containing his thesis, namely, that the production of knowledge in us is caused from knowledge already existing; hence he says, ‘Every doctrine and every discipline...’ He does not say, ‘all knowledge,’ (*omnis cognitio*) because not all knowledge depends on previous knowledge, for that would involve an infinite process: but the acquisition of every discipline comes from knowledge already possessed.” See also Barnes (1994): 81.

of learning.³⁴³ Aristotle here tells us, however, that preceding *gnōsis* is required for all *dianoetic* learning. This is particularly revealing given that the two categories of virtue Aristotle considers are ethical or moral (ἠθικὴ) and intellectual or dianoetic (διανοητικὴ).³⁴⁴ While it is true that Aristotle must here exclude whatever process of learning results in perceptual *gnōseis* in order to avoid a regress, he is plausibly also excluding moral formation and the acquisition of the ethical virtues. This first principle of the *Posterior Analytics*, therefore, is meant to spell out in more explicit terms what holds specifically of learning by *logos*: his insistence that *dianoetic* learning should proceed from a preexisting *gnōsis* is simply a more precise way of talking about acquiring capacities which arise by *logos*.³⁴⁵ This is therefore not a denial or restatement of Aristotle’s more general learning principle—that we learn by doing the very things we are learning to do, by prior activity—but rather a further specification of it, of how prior activity brings about learning in the dianoetic or intellectual case.

Thus, given the context of my argument, it is significant that Aristotle begins this treatise with some principle to describe this particular mode of learning and of *hexis*-acquisition. Since other interpretations of learning in Aristotle do not begin with a generic account of ethical and dianoetic learning which involves prior activity, those other interpretations do not foresee this need to distinguish between ethical and dianoetic learning, at least not in this way. Indeed, a possible worry

³⁴³ Where “learning” implies the acquisition or development of some *hexis*. The *genesis* of the perceptual power *simpliciter* would not require prior activity and would therefore fall outside of the scope of the generic account I gave. I shall simply note here that a different account must be given for the coming to be of this perceptual *dynamis*. Even the acquisition of perceptual *gnōsis*, however, must come by prior activity of the perceptual power. As I shall argue in the coming sections, this is not dianoetic, but rather a kind of perceptual habituation.

³⁴⁴ *EN* II.1 1103a14-18: “Virtue, then, being of two kinds, dianoetic and ethical, dianoetic virtue in the main owes both its birth and its growth to teaching (for which reason it requires experience and time), while ethical virtue comes about as a result of habituation” (trans. Ross, my edits) (Διττῆς δὴ τῆς ἀρετῆς οὐσης, τῆς μὲν διανοητικῆς τῆς δὲ ἠθικῆς, ἡ μὲν διανοητικὴ τὸ πλεῖον ἐκ διδασκαλίας ἔχει καὶ τὴν γένεσιν καὶ τὴν αὐξήσιν, διόπερ ἐμπειρίας δεῖται καὶ χρόνου, ἡ δ’ ἠθικὴ ἐξ ἔθους περιγίνεται, ὅθεν καὶ τοῦνομα ἔσχηκε μικρὸν παρεκκλῖνον ἀπὸ τοῦ ἔθους). Though I often follow the traditional convention of referring to intellectual and moral virtue, these words are translating ἀρετὴ διανοητικὴ and ἀρετὴ ἠθικὴ. Accordingly, I here use “intellectual” and “dianoetic” interchangeably, as well as “moral” and “ethical,” insofar as the latter in each pair simply transliterates the Greek term. It should be added that these are the two categories of *psychic* virtue. Aristotle does allow that there are bodily *hexeis* and therefore bodily virtues, like health or strength (cf. *Phys.* VII.3).

³⁴⁵ This is related to Aristotle’s discussion in B.19 where only those cases of perceptual *gnōsis* that result in a *logos* are of interest to him. Non-logical *gnōseis* are of little interest to his project here.

about my view is that by emphasizing prior intellectual activity I have lost what is distinctive to learning *by logos*. But on my view, Aristotle gives us precisely that distinctive feature in the opening of the *Posterior Analytics*, by relying upon a preexisting *gnōsis* to inform or otherwise guide one's intellectual formation, which requirement does not hold in the case of moral formation or the development of technical and perceptual *empeiria*, all capacities developing by habituation properly so-called (ἔθει). Far from excluding or ruling out the necessity of prior activity in intellectual formation, this principle ought to be understood as specifying how prior activity might operate.

We have therefore found in the opening lines of the *Posterior Analytics* something like a second Learning Principle which encapsulates what is distinctive about intellectual formation and the process of acquiring dianoetic virtues by learning (μαθήσει) and by *logos*.³⁴⁶ In the previous chapter I worked to show what holds of dianoetic and ethical learning alike, against a more popular conception which equates learning by prior activity and learning by habituation (ἔθει). Having established that, on the contrary, prior activity holds generically of both habituated and non-habituated modes of learning, we can now make some progress toward understanding what holds specifically of each. More must be said, however, to explain how these General and Specific Learning Principles cohere:

General Learning Principle: For all learning, we learn to φ by φ -ing.

Specific Learning Principle: For all dianoetic learning, we learn from preexisting *gnōsis*.

The task going forward is to explain, in some measure, how preexisting *gnōseis* are at work in shaping the prior activity of the intellectual faculty itself throughout the process of dianoetic learning.

4.2.2 The Place of Experience in *Metaphysics A.1*

So let us turn to the development of one dianoetic virtue in particular, *nous*. The problems, puzzles, and questions surrounding the interpretation of *Posterior Analytics* B.19 are legion.³⁴⁷ My focus and

³⁴⁶ *Technē* and *phronēsis* are the difficult cases, though I shall consider some technical examples. I must set aside for the present how one learns to be prudent from preexisting *gnōsis*. Though I should say that, insofar as *phronēsis* is not a properly moral virtue, it plausibly does not arise from habituation in the strict sense either, but perhaps proceeds reflectively from the right moral habits. See for example John McDowell, "Deliberation and Moral Development in Aristotle's Ethics" (2009b).

³⁴⁷ One might raise questions about the argument at the beginning of the chapter, regarding both the structure of the argument against an innate grasp of first principles and precisely how to specify his primary argumentative target. Cf. e.g. Gail Fine, *The Possibility of Inquiry* (2014). One might

my point of entry will be Aristotle's remarks about cognitive capacities and states in the middle of the chapter, though this will surely have implications for many other interpretive questions issuing from this difficult text. Given my focus, the most notable standing debate about which I must register an opinion is the nature of experience (ἐμπειρία). I suggest that current interpretive difficulties—both about B.19 and about *empeiria* more generally—may result in part from overlooking a distinction between *logoi* without qualification and the *orthos logos*, that is, the *correct* account. On the alternative interpretation I shall here develop, *logoi* without qualification proceed by induction from perceptual *gnōseis* without qualification, moving from particulars to universals, while the *orthos logos* proceeds inductively from the perfected perceptual *gnōsis* of *empeiria*.

Much of the current debate about this chapter regards the place of *empeiria* in the ascent to first principles. The character of perception and memory seem to be straightforward enough, being cognitive capacities and states that we share with many other animals, and are treated at length in the psychological treatises. And the robustly intellectual character of knowledge, art, and the grasp of their first principles is similarly familiar from the rest of the *Analytics*, the *Metaphysics*, and the shared book treating of intellectual virtue in the ethical treatises.³⁴⁸ Indeed, although the grasp of first principles stands in need of some explanation, *that* art and demonstrative knowledge proceed from first principles, at any rate, and *that* they must be of a certain character (immediate, better known than, etc.) has been clear from the earliest chapters of the *Posterior Analytics*.³⁴⁹ One way of characterizing B.19 is Aristotle's attempt to cross this gap, to explain how we span the chasm between low-level cognitive capacities and states we share with other animals and the robustly intellectual capacities and states that are distinctive to us as rational animals, with *empeiria*—the most mysterious item of the bunch—serving as a kind of bridge. My ultimate aim is to suggest that this is decidedly *not* Aristotle's purpose in the chapter, that bridging this gap from particular to universal or from perception to *logoi* in general is not his principal concern in B.19, but rather how we get the *correct* universals that constitute the grasp of the first principles of art and of demonstrative science.

alternatively raise questions about the character of first principles themselves, whether they are foundational but logically complex propositions or rather simple concepts, a question rendered difficult by remarks toward the end of the chapter. Cf. e.g. Jonathan Barnes' edition of the *Posterior Analytics* (1994) and David Charles, *Aristotle on Meaning and Essence* (2002). Likewise one might ask whether the cognitive ascent described in the chapter terminates in ordinary-language concepts or robust scientific notions. Cf. e.g. Dominic Scott, *Recollection and Experience* (2007).

³⁴⁸ *Nicomachean VI* or *Eudemian V*.

³⁴⁹ Cf. *APo.* A.2 *passim*.

But setting aside that larger concern, on every reading of our chapter *empeiria* serves as an important and indeed somewhat mysterious link in the cognitive chain going from perception and memory to the intellectual grasp of first principles of *epistemē* and *technē*. The debate about its character has often been framed in terms of whether one regards *empeiria* as a grasp of particulars or universals, as Hasper and Yurdin have organized things in their recent joint paper.³⁵⁰ At the beginning of my own account, I frame the debate about the character of *empeiria* differently—related, to be sure, but with a distinct focus. I ask the following question: In what way is experience a perfected and excellent cognitive state, and in what way is it, as such, cognitively incomplete?

On a first reading of *Posterior Analytics* B.19 (and the parallel discussion in *Metaphysics* A.1), we find that *empeiria* has a privileged place in the cognitive ascent that falls short of a grasp of first principles. Indeed, in *Metaphysics* A.1 Aristotle says that many memories of the same thing “complete” or “perfect” the capacity of a single experience (μιᾶς ἐμπειρίας δύναμιν ἂποτελοῦσιν).³⁵¹ This idea is made more manifest when, also in A.1, Aristotle praises the success of the person of experience over against the person possessing only a *logos*:

With a view to action experience seems in no respect inferior to art, and we even see people of experience enjoying more success than those who have a *logos* without experience.³⁵²

This is confirmed by how highly Aristotle speaks of experience in more particular scientific contexts, and for those in error how much he attributes to their *inexperience*. In the *Prior Analytics* Aristotle even says that experience “hands on” the principles of knowledge.³⁵³ As a preliminary constraint, then, *empeiria* itself must constitute a cognitive achievement and a perfection of the cognitive faculty.³⁵⁴

But Aristotle also indicates that *empeiria* leaves something to be desired. Despite its being a cognitive perfection that renders one practically successful when compared to an inexperienced

³⁵⁰ Pieter Sjoerd Hasper and Joel Yurdin “Between Perception and Scientific Knowledge: Aristotle’s Account of Experience” *Oxford Studies in Ancient Philosophy* (2014).

³⁵¹ Cf. *Meta.* A.1 980b25-981a1.

³⁵² *Meta.* A.1 981a12-15: πρὸς μὲν οὖν τὸ πράττειν ἐμπειρία τέχνης οὐδὲν δοκεῖ διαφέρειν, ἀλλὰ καὶ μᾶλλον ἐπιτυχάνουσιν οἱ ἐμπειροὶ τῶν ἄνευ τῆς ἐμπειρίας λόγον ἔχόντων.

³⁵³ Cf. *APr.* A.30 46a17-21. It is interesting to note that the verb here is *paradounai*, related to the Latin *tradere* from which we get the English ‘tradition.’

³⁵⁴ Cf. e.g. Robert Bolton’s “Aristotle’s Method in Natural Science: *Physics* I.1” (1991) for an opposing view.

person with a or even the *logos*, and although it significantly contributes to and, in the words of Polus, even *makes* science and art (ἐμπειρία τέχνην ἐποίησεν), it is nevertheless carefully distinguished from science and art. Indeed, far from being in tension with the first set of claims, this difference between *empeiria* and *technē* even explains why the person of experience enjoys the practical and productive success that he does, as Aristotle tells us immediately following the above:

The reason is that *empeiria* is a *gnōsis* of particulars, while art is a *gnōsis* of universals, and all actions and productions are concerned with what is particular. For the physician does not heal a man except accidentally, but Callias or Socrates.³⁵⁵

What makes *empeiria* rank lower than art as a cognitive state, namely its being *of* particulars, is also the very feature that explains its practical or productive advantage. Nevertheless, as part of his cognitive ascent to wisdom of the highest sort, Aristotle emphasizes universal and indeed *impractical* things.³⁵⁶ So, one of the first ways to capture the difference between *empeiria* (whatever perfection it might be) and properly *intellectual* virtues is the difference between being *of* particulars and *of* universals.

Another way of capturing the difference, more familiar to the idiom of *Posterior Analytics* B, is between merely grasping the that (τὸ ὅτι) and (also) grasping the because (τὸ διότι), a second distinction Aristotle introduces just after discussing the relative success of the *empeiros* in A.1. To wit:

For people of experience know *that* the thing is so, but do not know *why*, while the others know the “why” and the cause. Hence we think that the master-workers in each craft are more honorable and know in a truer sense and are wiser than the manual workers, because they know the causes of the things that are done (we think that manual workers are like certain soulless things which act indeed, but act without knowing what they do, as fire burns—but while soulless things perform each of their functions by a natural tendency, the laborers perform them through *ethos*. So, [master craftsmen] are not wiser because they are more practical, but because they have the *logos* and know the causes.³⁵⁷

³⁵⁵ *Meta.* A.1 981a15-19: αἴτιον δ' ὅτι ἢ μὲν ἐμπειρία τῶν καθ' ἕκαστόν ἐστι γνῶσις ἢ δὲ τέχνη τῶν καθόλου, αἱ δὲ πράξεις καὶ αἱ γενέσεις πᾶσαι περὶ τὸ καθ' ἕκαστόν εἰσιν. οὐ γὰρ ἄνθρωπον ὑγιάζει ὁ ἰατροῦς ἀλλ' ἢ κατὰ συμβεβηκός, ἀλλὰ Καλλίαν ἢ Σωκράτην.

³⁵⁶ Cf. *Meta.* A.1 981b13-982a1.

³⁵⁷ *Meta.* A.1 981a28-b6: οἱ μὲν γὰρ ἔμπειροι τὸ ὅτι μὲν ἴσασι, διότι δ' οὐκ ἴσασι· οἱ δὲ τὸ διότι καὶ τὴν αἰτίαν γνωρίζουσιν. διὸ καὶ τοὺς ἀρχιτέκτονας περὶ ἕκαστον τιμιωτέρους καὶ μᾶλλον εἰδέναι νομίζομεν τῶν χειροτεχνῶν καὶ σοφωτέρους, ὅτι τὰς αἰτίας τῶν ποιουμένων ἴσασι (τοὺς

Indeed, as Aristotle writes in another place later in the *Metaphysics*, the *logos* is unclear or obscure (ἄδηλος) when it does not express the cause.³⁵⁸ The *logos* which expresses and in virtue of which we grasp *merely* the fact that but not the reason why is rightly said to be deficient *qua logos*. As a second preliminary constraint, then, the *logos* of “mere thats” must be an unclear *logos*, which is neither perfect nor complete *qua logos*. Within the context of *Metaphysics* A.1, at any rate, the particular/universal distinction is introduced first to explain the practical and productive success of the *empeiros*, while the that/because distinction is introduced second to explain what the *empeiros* lacks.

It is very tempting to identify a *gnōsis* of particulars with a *gnōsis* of the fact that, and a *gnōsis* of universals with a *gnōsis* of the reason why.³⁵⁹ While this identification is suggested by the compressed argument of A.1, it is the cause of much of the interpretive difficulty: if every *gnōsis* of “mere thats” is a *gnōsis* of particulars only, how ought we to characterize the *Historia Animalium*, a lengthy account of “mere thats”?³⁶⁰ It would be odd to characterize the content and claims of the *Historia Animalium* in purely particular terms, for example as holding about these here elephants but not about this kind of elephant in general. And so this difficulty looms large for any straightforward identification of the two distinctions Aristotle introduces, particular/universal and that/because. On the one hand, *empeiria* seems to supply us with a *gnōsis* of what I have been calling “mere thats,” and in this way provides or itself constitutes a *logos* which is incomplete with respect to knowledge of the cause. On the other hand, Aristotle regards *empeiria* as a mastery over particulars, bringing to perfection many memories of a single thing. How ought we to square these two commitments? This tension becomes even more pronounced if we straightforwardly identify the particular/universal distinction with the that/because distinction, an identification Aristotle’s own discussion invites us to make. In view of this difficulty, however, perhaps these two distinctions do not align as well as is commonly supposed.

δ', ὡσπερ καὶ τῶν ἀψύχων ἕνια ποιεῖ μὲν, οὐκ εἰδότα δὲ ποιεῖ ἃ ποιεῖ, οἷον καίει τὸ πῦρ—τὰ μὲν οὖν ἄψυχα φύσει τινὶ ποιεῖν τούτων ἕκαστον τοὺς δὲ χειροτέχνους δι' ἔθους), ὡς οὐ κατὰ τὸ πρακτικούς εἶναι σοφωτέρους ὄντας ἀλλὰ κατὰ τὸ λόγον ἔχειν αὐτοὺς καὶ τὰς αἰτίας γνωρίζειν.

³⁵⁸ Cf. *Meta.* H.4 1044b12-15: “The cause with respect to form is the *logos*, but the *logos* is unclear if it is without the cause (τὸ δ' ὡς εἶδος ὁ λόγος, ἀλλὰ ἄδηλος ἐὰν μὴ μετὰ τῆς αἰτίας ἢ ὁ λόγος). For example, ‘what is an eclipse?’ ‘A privation of light.’ But if one were to add ‘that which occurs by the earth having come to be in between,’ *that logos* would be given along with the cause.”

³⁵⁹ I deliberately use the more generic term *gnōsis* here, rather than *logos*.

³⁶⁰ Cf. *HA* I.6.

4.2.3 Framing an Account of *Posterior Analytics* B.19

Given this discussion, perhaps the (merely) experienced are deficient in some significant respect and so *qua* experienced they seem to lack intellectual virtue properly so-called, but *empeiria* nevertheless seems to be itself a perfect and complete cognitive state, perhaps even a cognitive virtue or excellence of some non-intellectual sort. With these constraints in the background, I suggest that an explicit and focused reflection on the place of **inexperience** in Aristotle's account promises to move things forward regarding how *empeiria* is already perfected and how it remains incomplete. Instead of asking what the *empeiroi* have, let us make a fresh start by asking what the *apeiroi* lack.

In order to focus our discussion, I propose two more determinate questions that any adequate interpretation of B.19 must answer, questions that seem to generate varying degrees of difficulties for recent views. My investigation into inexperience aims at answering these more determinate questions about our text. First, in B.19 Aristotle offers two different descriptions of the cognitive ascent from perception to *logos*: while both mention memory as an intermediate step, only the second also mentions experience. How are these two cognitive ascents related? Does Aristotle endorse both of them, or only the second that includes *empeiria*? Second, how ought we to interpret the “or” in the following lines: “And from experience **or from the whole universal having come to rest in the soul** [...arises] the principle of art and scientific knowledge”³⁶¹ Does this mean, as many have supposed, that *empeiria* is itself universal? Or rather does it suggest something between *empeiria* and first principles?

These interpretive questions provide an occasion to reflect more fruitfully on inexperience. Aristotle occasionally mentions *logoi* arising from inexperience or insufficient experience, most often the scientific theories of his predecessors. And indeed, as we have already noted, he cites someone with a *logos* who lacks *empeiria* in *Metaphysics* A.1. These cases of inexperienced *logoi* create some space when returning to the peculiar difficulties of B.19 and to these two interpretive questions in particular, allowing for a more nuanced schema of perception, memory, *empeiria*, and *logos*, a new account of the relations between these cognitive capacities and states.

³⁶¹ *APo.* B.19 100a6-8, my emphasis added: ἐκ δ' ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ [...] τέχνης ἀρχὴ καὶ ἐπιστήμης.

I begin by briefly noting alternative answers to the questions that I have raised. It is common to describe the cognitive ascent in B.19 as going from perception to memory to *empeiria* and finally to first principles, the grasp of which constitutes the intellectual virtue of *nous*.³⁶² Aristotle writes:

So, memory arises from perception, just as we said, and experience arises from memory coming to be often of the same thing. For memories constitute an experience that is one in number. And from experience or from the whole universal having come to rest in the soul, from the one beside the many, that which is singularly the same in all those things, [arises] the principle of art and scientific knowledge, of art if it is concerning coming to be, of scientific knowledge if it concerns what is.³⁶³

Given this passage and the parallel discussion in *Metaphysics* A.1,³⁶⁴ we have in view the following description of the ascent to first principles.

Second Ascent: Perception → Memory → *Empeiria* → First Principles

I have named this the **Second Ascent** because this is neither the only nor the first description of cognitive ascent that Aristotle gives in B.19. Indeed, just lines prior to the above passage, he says:

And it seems that this, at any rate, belongs to all animals. For they have an innate discriminative capacity, which people call “perception.” Given that perception is present, in some of the animals a persistence of the perceptible is engendered, in others it is not engendered. Thus, for those in whom it is not engendered, there is no *gnōsis* outside of the activity of perceiving, either in general or concerning the things which are not engendered. But for those in whom there is [a persistence], having

³⁶² Cf. *APo.* B.19 100b5-17. We of course must be careful to distinguish *nous-as-dynamis* and *nous-as-hexis* or -as-virtue, as mentioned previously. While some may find in B.19 a mention of *nous-as-dynamis* (again, cf. Leshner (1973)), it is more likely that the discussion is of *nous* in the same sense as in *Nicomachean Ethics* VI.6, a state and not a capacity. Accordingly, *nous* in this context just is that dianoetic state in virtue of which we grasp the first principles, the *orthos logos* of a given mode in a given domain.

³⁶³ *APo.* B.19 100a3-9: Ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία· αἱ γὰρ πολλαὶ μνήμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ’ ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἐνὸς παρὰ τὰ πολλά, ὃ ἂν ἐν ἅπασιν ἐν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης.

³⁶⁴ Cf. *Meta.* A.1 980a27-981a12.

completed [acts of] perceiving they still have [a persistence] in the soul. And when many such things have occurred, some distinction already has arisen, between those animals in which a *logos* arises from the persistence of such things, and those in which it does not.³⁶⁵

This passage comes at the end of a discussion of rival views about how we possess the first principles, whether they are innate or acquired. If they are acquired, as Aristotle wants to maintain, then they themselves must proceed from some preexisting *gnōsis*.³⁶⁶ Aristotle then points out that all animals have an innate discriminatory capacity, perception. But a distinction arises among animals, first between those in which perception leaves a lasting impression in memory and those in which no such persistence is possible. And, in the second place, there is a distinction among these remembering animals: on the one hand, there are those in which a *logos* arises from such memories or perceptual persistences, and on the other hand, those for which no such *logos* comes about.

One preliminary remark about this passage giving a different cognitive ascent. Some have interpreted this passage as describing cognitive capacities and different animal kinds in possession of these capacities, rather than describing cognitive states (ἔξεις) or cognitions (γνώσεις).³⁶⁷ Accordingly, some may think that the apparent tension between these two ascents can be solved in the following way: in the first Aristotle is describing cognitive capacities or different cognitive lives that animals of different sorts can lead. On this view, the *logos* that arises in the first passage is not understood as any particular theory or account, but rather as the general capacity to reason which arises in some animals having memory (i.e. humans) but not in other animals. In contrast, on this view, the **Second Ascent** more properly describes determinate cognitive states on the way to the grasp of first principles. In this way, such interpreters dissolve any tension between the two cognitive ascents Aristotle describes.

³⁶⁵ *APo.* B.19 99b34-100a3: φαίνεται δὲ τοῦτό γε πᾶσιν ὑπάρχον τοῖς ζώοις. ἔχει γὰρ δύναμιν σύμφυτον κριτικὴν, ἣν καλοῦσιν αἰσθησίν· ἐνούσης δ' αἰσθήσεως τοῖς μὲν τῶν ζώων ἐγγίγνεται μόνῃ τοῦ αἰσθήματος, τοῖς δ' οὐκ ἐγγίγνεται. ὅσοις μὲν οὖν μὴ ἐγγίγνεται, ἢ ὅλως ἢ περὶ ἃ μὴ ἐγγίγνεται, οὐκ ἔστι τοῦτοις γνώσεις ἔξω τοῦ αἰσθάνεσθαι· ἐν οἷς δ' ἔνεστιν αἰσθομένοις ἔχειν ἔτι ἐν τῇ ψυχῇ. πολλῶν δὲ τοιούτων γινομένων ἤδη διαφορὰ τις γίνεται, ὥστε τοῖς μὲν γίνεσθαι λόγον ἐκ τῆς τῶν τοιούτων μόνῃς, τοῖς δὲ μή.

³⁶⁶ Cf. *APo.* B.19 99b20-34, in view of the principle from *APo.* A.1 71a1-2.

³⁶⁷ Cf. in the first place Pacius *In Aristotelis Organon commentarius analyticus* (1967), via Barnes (1994).

Two replies to this view: first, memory is simply defined as a state (ἐξίς) of the perceptual or imaginative capacity in the *de Memoria*.³⁶⁸ So, there does not seem to be a distinct capacity for memory which comes to have memories as particular states of that distinct capacity. Rather, animals are capable of having memories in virtue of having a perceptual capacity *of a certain sort*: it is the perceptual capacity itself in virtue of which some animals are capable of having memories. Accordingly, animals capable of forming memories do not have distinct capacities, one for perception and another for memory; rather, they have a perceptual capacity of a certain sort, one that is capable of retaining memories as perceptual states. For these animals, perceptual content persists in memory almost automatically. If this is right, then the first distinction in the first passage is between animals in whom perceptual *states* (i.e. memories) remain and those in whom they do not remain, and the second distinction is similarly about *logoi* considered as cognitive states and not as a cognitive capacity in general.

In the second place, we must recall the argumentative context into which the first cognitive ascent fits, as we work backwards through the chapter. Aristotle insists that we do not have the first principles innately and that we must acquire them; but since this is a case of *dianoetic* learning, it must proceed from some preexisting *gnōsis* in view of *Posterior Analytics* A.1.³⁶⁹ He concludes a segment of his argument thus:

So it is clear, both that we cannot have [first principles already] and that it is not possible for them to come to be in those who are ignorant and have no state. Consequently it is necessary to have some capacity, but not one such as will be more honorable than these in precision. And it seems that this, at any rate, belongs to all animals [...].³⁷⁰

His search, then, is for some preceding *gnōsis*, which he here understands to be a cognitive state (ἐξίς). The next line, then, should strike us as a categorically incomplete answer: “consequently it is necessary to have some capacity (τινα δύναμιν).” It is not enough to find some *capacity*, since the grasp of first principles must arise from some cognitive *state*. Therefore, the bit about memory

³⁶⁸ Cf. *de Mem.* 450a22-b11, as well as 451a15-18.

³⁶⁹ Cf. *APo.* A.1 71a1-2: Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως.

³⁷⁰ *APo.* B.19 99b30-34: φανερόν τοίνυν ὅτι οὐτ’ ἔχειν οἷόν τε, οὐτ’ ἀγνοοῦσι καὶ μηδεμίαν ἔχουσιν ἔξιν ἐγγίγνεσθαι. ἀνάγκη ἄρα ἔχειν μὲν τινα δύναμιν, μὴ τοιαύτην δ’ ἔχειν ἢ ἔσται τούτων τιμιωτέρα κατ’ ἀκρίβειαν. φαίνεται δὲ τοῦτό γε πᾶσιν ὑπάρχον τοῖς ζώοις.

immediately following is not some further story Aristotle tells, having already found an answer in the more general capacity for perception. Rather, only with memories do we have an appropriately persisting *gnōsis* and cognitive *hexis* from which we can acquire the first principles. Moreover, that the perceptual capacity alone is insufficient to meet the demands of the preceding argument is confirmed by what he says next, that “this *at any rate* (γῆ) belongs to all animals,” and further why he says that for animals lacking memory, there is no *gnōsis* outside of the activity of perceiving. This is because the perceptual capacity alone does not answer the demand of his argument, but only the *gnōseis* that the perceptual capacity can provide.³⁷¹

For these reasons we should take the items in the **First Ascent** not to describe capacities for memory or reason in general, but rather cognitive states, such as particular memories or rational accounts. Accordingly, we have in the **First Ascent** another proper description of an ascent of *gnōseis* or cognitive states, but in this case without mentioning *empeiria*:

First Ascent: Perception → Memory → *Logos*

Even some who recognize this, however, see the **Second Ascent** as more precise, giving it a kind of interpretive priority.³⁷² I suggest, in contrast, that the two different ascents are both endorsed by Aristotle and both play a role in the progression from lower to higher cognitive states in B.19. What I am calling the **First Ascent** suggests that *logoi* can arise on the basis of memories alone.³⁷³ If that is right, then we are capable of having universals and reasoning universally without having yet achieved experience. In view of these two cognitive ascents, then, we are faced with a pressing question: how are intellectual states or activities possible without experience?

The second interpretive question I have proposed concerns a remark within the passage that gives the **Second Ascent**, a remark which closely aligns experience with a universal having come to

³⁷¹ Of course, sometimes Aristotle speaks of αἴσθησις in terms of the cognitive content it provides, and not merely as a capacity. Cf. e.g. *APo.* A.18 and A.31. In both cases we can take αἴσθησις to stand in for γνῶσις αἰσθητική.

³⁷² Cf. e.g. Barnes (1994) 262. Apostle (1981) suggests that *logos* in the first ascent is the same as *empeiria* in the second ascent (293). Hasper (Presentation 2015, University of Pittsburgh) suggests something similar, that *empeiria* is the only state between memory and scientific knowledge. This is standard for those who reject the progressive or corrective reading suggested by Charles (2002), below.

³⁷³ On this point it may be helpful to recall that those animals capable of memory are said to be wiser and more teachable in *Metaphysics* A.1 980b21-25, that whatever vague or incomplete participation brute animals have in *logoi* is in virtue of memory, in the first instance.

rest in the soul. I shall not spend much time reviewing the point nor shall I offer decisive evidence against the two most common interpretations of the “or.” I hope instead to motivate a search for an alternative, suggesting that we should not be too quick to embrace these other readings. The first and perhaps most common reading is exegetical, where the “or” simply means “that is to say.”³⁷⁴ On this reading, experience *just is* a universal having come to rest in the soul. Another reading suggests that the “or” is corrective or progressive, and so ought to be understood as “or rather.”³⁷⁵ On this reading Aristotle prefers to say that the first principles proceed from something universal and intermediate between *empeiria* and first principles, rather than from *empeiria* straightaway. But both approaches, among other things, struggle to explain the later thought that first principles arise by induction from a grasp of perceptual *particulars*:

So, the *hexeis* do not exist in us determinately, nor do they come to be from other *hexeis* that are more knowable, but from perception. [...] So it is clear that it is necessary for us to come to know the first [principles] by induction; for in this way even the perception introduces the universal.³⁷⁶

Both readings suggest that the first principles come from something universal, whether they consider *empeiria* to be this universal or not. This is in *prima facie* tension with the idea that the first principles proceed inductively from particulars, an idea to which Aristotle seems to be clearly committed.³⁷⁷ Another initial difficulty with these two approaches: in many other discussions, for example *Prior Analytics* A.30 and *Metaphysics* A.1, Aristotle suggests that *empeiria* is not as such a cognition of universals. That is, there is a distinction between the cognition of particulars which *empeiria* constitutes as such, and the universal cognitions that it makes possible.³⁷⁸ But these very

³⁷⁴ Cf. e.g. Ross *ad loc*, as well as Hasper (Presentation 2015).

³⁷⁵ Cf. e.g. Charles (2002) 149-151.

³⁷⁶ *APo.* B.19 100a10-11, b2-5: δῆλον δὲ ὅτι ἡμῖν τὰ πρῶτα ἐπαγωγῆ γνώριζεν ἀναγκαῖον· καὶ γὰρ ἢ αἰσθησις οὕτω τὸ καθόλου ἐμποιεῖ. [...] οὔτε δὲ ἐνυπάρχουσιν ἀφορισμέναι αἱ ἕξεις, οὔτ’ ἀπ’ ἄλλων ἕξεων γίνονται γνωστικωτέρων, ἀλλ’ ἀπὸ αἰσθήσεως.

³⁷⁷ Cf. *APo.* A.1 71a5-9. Of course, there are difficulties in supposing that induction is sufficient to produce the first principles; many of these interpreters seek a further step by which we grasp the principles *as principles*. I address this alternative approach in passing in what follows, both in this chapter and in the next. I am generally unconvinced by their approach, however. For a recent defender of this view, see Gasser (2015), but it goes back at least as far as Kosman (1973).

³⁷⁸ See, for example, *HA* 9.24 604b25-27: “In general, the people with experience say the horse and the sheep have about as many ailments as afflict man” (tr. Hasper, 2015); Hasper takes this as proof that *empeiria* has universal content. I, however, recognize a distinction between what *gnōsis* the state

same passages make it plain that first principles proceed directly from experience without a mediating state. On the one hand, experience and universals are treated as distinct cognitive items in these passages, against the exegetical reading that endows *empeiria* with universal content; on the other hand, the relationship between experience and universals seems to be unmediated, against the corrective reading that posits a mediate universal *gnōsis*.

Finally and perhaps least compelling is a consideration of Aristotle's usage. I shall not delve into particular passages here, but one might worry that the exegetical reading is a familiar use of the Greek *kai* in Aristotle, but not a standard way in which he uses the conjunction $\bar{\epsilon}$. There are worries articulated on the other side about whether Aristotle ever uses $\bar{\epsilon}$ correctively. Without leaning too heavily on these points, and certainly without giving a proper philological analysis here, I mention these considerations as reasons for being unhappy with the two dominant readings of the "or," and invitations to pursue an alternative. To put my question in stronger terms going forward: what if the "or" in this line is neither exegetical (identifying experience with a universal in the soul) nor corrective (pointing to an intermediate universal issuing from experience) but rather disjunctive? And if we entertain a disjunctive reading, what sort of disjunction is on offer?

4.2.4 Toward an Alternative Account of *Posterior Analytics* B.19

In view of these interpretive questions, then, let us survey places where Aristotle attributes *logoi* to those who lack experience. First and most clearly is *Metaphysics* A.1 itself, where Aristotle compares the person of mere experience and the person who has the art. Recall:

With a view to action experience seems in no respect inferior to art, and we even see people of experience enjoying more success than those who have a *logos* without experience.³⁷⁹

At first he argues that *empeiria* does not seem to differ from art. But immediately Aristotle makes a further claim, that the person of experience will enjoy greater success than the person without it, no matter how able the inexperienced person is in theoretical matters. There are several ways that one might take these two distinct but related claims; it is clear, at any rate, that Aristotle is conceding the

of *empeiria* constitutes as such, and the *logoi* that are available to the *empeiroi* in virtue of their having achieved the relevant *empeiria*.

³⁷⁹ *Meta.* A.1 981a12-15: πρὸς μὲν οὖν τὸ πράττειν ἐμπειρία τέχνης οὐδὲν δοκεῖ διαφέρειν, ἀλλὰ καὶ μᾶλλον ἐπιτυγχάνουσιν οἱ ἔμπειροι τῶν ἄνευ τῆς ἐμπειρίας λόγον ἔχόντων.

experienced person's practical abilities while at the same time inviting us to move beyond a consideration of mere practicalities. After all, he goes on in the same chapter to insist that philosophical inquiry and the pursuit of wisdom first began when a class of people were afforded freedom from necessities and practicalities.³⁸⁰ Whatever we might say about his reasons for believing this, it is indisputable *that* Aristotle believed it: philosophic or theoretical wisdom is higher and more honorable in large part because it is not directed at action. So, I take the following to be uncontroversial: Aristotle is conceding that *empeiria* lends itself to a greater degree of practical success, while insisting that practical success is not the relevant measure of importance in this context.

More important for our purposes, however, is the exact contrast he draws when making these two points. Although Aristotle does compare art and experience, he says that they do not differ at all with respect to action; the experienced technician does not enjoy more success than the true physician. Aristotle is not contrasting the person of mere experience with an inexperienced person who possesses the *art or science* in question. Although this is a common way of taking these lines, the text itself does not suggest the possibility of someone who is inexperienced yet in possession of the relevant intellectual *virtue*.³⁸¹ What Aristotle does say is that the *empeiroi* enjoy greater success than inexperienced people who have a *logos* (τῶν ἄνευ τῆς ἐμπειρίας λόγον ἔχόντων), while differing *not at all* in practical matters from those who possess the relevant art. This clarification is crucially important on my view: the text does not suggest the possibility of someone who has some intellectual virtue without experience. Indeed, as I insist, *empeiria* is a necessary condition for intellectual virtue. One cannot be a true physician in possession of the art of medicine without also possessing medical experience. After all, experience in each domain “hands on” the principles and “makes” art. The contrast case here is someone lacking in *empeiria* who possesses some and perhaps the *logos* in question, but not yet the *orthos logos* constituting the intellectual virtue.³⁸² This passage suggests the possibility of someone having a *logos* without experience, while saying nothing about possessing the *orthos logos* without *empeiria*.

³⁸⁰ Cf. *Meta.* A.1 981b13-982a3.

³⁸¹ Cf. e.g. De Groot *Aristotle's Empiricism* (2014): 64-5.

³⁸² I must concede that in the second of Aristotle's comparisons at 981a21 he mentions something having *the logos* without experience. Given his other commitments, however, most notably in *APo.* B.19, and given that even this passage does not force our interpretive hand, we should not conclude

This conclusion is confirmed by a survey of passages in which he criticizes predecessor views for their lack of experience. It is clear in all of these contexts that other theorists have *logoi*—that is to say, they have theoretical accounts—but Aristotle says that their *logoi* are deficient owing to inexperience with the relevant facts. First, Aristotle says in the *Physics* that those who fall into the Parmenidean dilemma have overgeneralized and exaggerated the force of the dilemma on account of their lack of experience (ἀπωσθέντες ὑπὸ ἀπειρίας).³⁸³ Second, in the *Parva Naturalia* he surveys several *physikoi* and their inadequate theories about respiration, who were rather inexperienced with the facts (ἀπειροτέρως τῶν συμβαινόντων): as a result they overgeneralized and concluded that all animals respire, speaking of the common only.³⁸⁴ Third, Aristotle entertains a *logos* in the *de Generatione Animalium* that he calls excessively universal and empty (καθόλου λίαν καὶ κενός), not proceeding from the appropriate principles, merely seeming to be without truly being related to the facts.³⁸⁵ And finally, similar passages can be found in the *Eudemian Ethics* where beliefs about friendship are considered excessively universal (λίαν ... καθόλου), while others are preferable because they are closer and more proper to the phenomena (ἐγγυτέρω καὶ οἰκεῖται τῶν φαινομένων).³⁸⁶ This is by no means exhaustive, but rather representative, that Aristotle in different

that *the logos* here is the same as the *orthos logos*. Had he meant this, he would have named the physician or a person in possession of the relevant art or knowledge.

³⁸³ Cf. *Phys.* I.8 191a24-33: ζητοῦντες γὰρ οἱ κατὰ φιλοσοφίαν πρῶτοι τὴν ἀλήθειαν καὶ τὴν φύσιν τῶν ὄντων ἐξετράπησαν οἷον ὁδόν τινα ἄλλην ἀπωσθέντες ὑπὸ ἀπειρίας, καὶ φασιν οὔτε γίνεσθαι τῶν ὄντων οὐδὲν οὔτε φθειρεσθαι διὰ τὸ ἀναγκαῖον μὲν εἶναι γίνεσθαι τὸ γιγνόμενον ἢ ἐξ ὄντος ἢ ἐκ μὴ ὄντος, ἐκ δὲ τούτων ἀμφοτέρων ἀδύνατον εἶναι· οὔτε γὰρ τὸ ὄν γίνεσθαι (εἶναι γὰρ ἤδη) ἐκ τε μὴ ὄντος οὐδὲν ἂν γενέσθαι· ὑποκεῖσθαι γὰρ τι δεῖν. καὶ οὕτω δὴ τὸ ἐφεξῆς συμβαῖνον αὐξοντες οὐδ' εἶναι πολλά φασιν ἀλλὰ μόνον αὐτὸ τὸ ὄν.

³⁸⁴ *De Resp.* 470b6-10, 471b23-29: Περὶ γὰρ ἀναπνοῆς ὀλίγοι μὲν τινες τῶν πρότερον φυσικῶν εἰρήκασιν· τίνος μέντοι χάριν ὑπάρχει τοῖς ζώοις, οἱ μὲν οὐδὲν ἀπεφήναντο, οἱ δὲ εἰρήκασιν μὲν, οὐ καλῶς δ' εἰρήκασιν ἀλλ' ἀπειροτέρως τῶν συμβαινόντων. ἔτι δὲ πάντα τὰ ζῷα φασιν ἀναπνεῖν· τοῦτο δ' οὐκ ἔστιν ἀληθές. [...] αἴτιον δὲ μάλιστα τοῦ μὴ λέγεσθαι περὶ αὐτῶν καλῶς τό τε τῶν μορίων ἀπείρους εἶναι τῶν ἐντός, καὶ τὸ μὴ λαμβάνειν ἕνεκά τινος τὴν φύσιν πάντα ποιεῖν· ζητοῦντες γὰρ τίνος ἕνεκα ἡ ἀναπνοὴ τοῖς ζώοις ὑπάρχει, καὶ ἐπὶ τῶν μορίων τοῦτ' ἐπισκοποῦντες, οἷον ἐπὶ βραγχίων καὶ πνεύμονος, εὔρον ἂν θάττον τὴν αἰτίαν.

³⁸⁵ *GA* 747b27-8a9: Ἴσως δὲ μᾶλλον ἂν δόξειεν ἀπόδειξις εἶναι πιθανὴ τῶν εἰρημένων λογική—λέγω δὲ λογικὴν διὰ τοῦτο ὅτι ὅσφ καθόλου μᾶλλον πορρωτέρω τῶν οἰκείων ἐστὶν ἀρχῶν. [...] οὗτος μὲν οὖν ὁ λόγος καθόλου λίαν καὶ κενός· οἱ γὰρ μὴ ἐκ τῶν οἰκείων ἀρχῶν λόγοι κενοί, ἀλλὰ δοκοῦσιν εἶναι τῶν πραγμάτων οὐκ ὄντες.

³⁸⁶ *EE* 1235a29-31: δύο μὲν αὗται δόξαι περὶ φιλίας εἰσὶ λίαν τε καθόλου καὶ κεχωρισμέναι τοσοῦτον· ἄλλαι δὲ ἡδὴ ἐγγυτέρω καὶ οἰκεῖται τῶν φαινομένων.

contexts notes thinkers who have an overgeneralized *logos* due to a lack of experience. We must concede that *logoi* are indeed possible without *empeiria* and that inexperience often explains why a *logos* falls short.

Upon reflection, this point already disrupts much of the standard account of *Posterior Analytics* B.19 and *Metaphysics* A.1: if an ascent to universals and to *logoi* is possible even before one has *empeiria*, then the linear story that B.19 and other passages recommend at first glance (perception to memory, memory to *empeiria*, *empeiria* to *logos*) cannot be so simple. Something more must be going on in the inductive process than going about our *merely* perceptual lives until, having achieved full-bodied experience, we are finally able to “show the universal through the particular being clear.”³⁸⁷ Rather, inquiring humans are engaged in properly intellectual activities and are beginning to form properly intellectual states even early in their perceptual engagement with a domain. *Theōrein* is not an activity occurring only after one has exhausted perceptual activity, nor is a *logos* a cognitive state one can have only after achieving the limit of perceptual engagement constituted by *empeiria*. Rather theoretical intellectual activity along with its cognitive item (λόγοι) is possible even on the basis of an *insufficient* perceptual *gnōsis*, insufficient precisely on account of inexperience.

In view of the preceding discussion and the possibility of inexperienced *logoi*, let us now return to the first question I raised about the two different cognitive ascents Aristotle gives in our chapter.

First Ascent: Perception → Memory → *Logos*

Second Ascent: Perception → Memory → *Empeiria* → First Principles

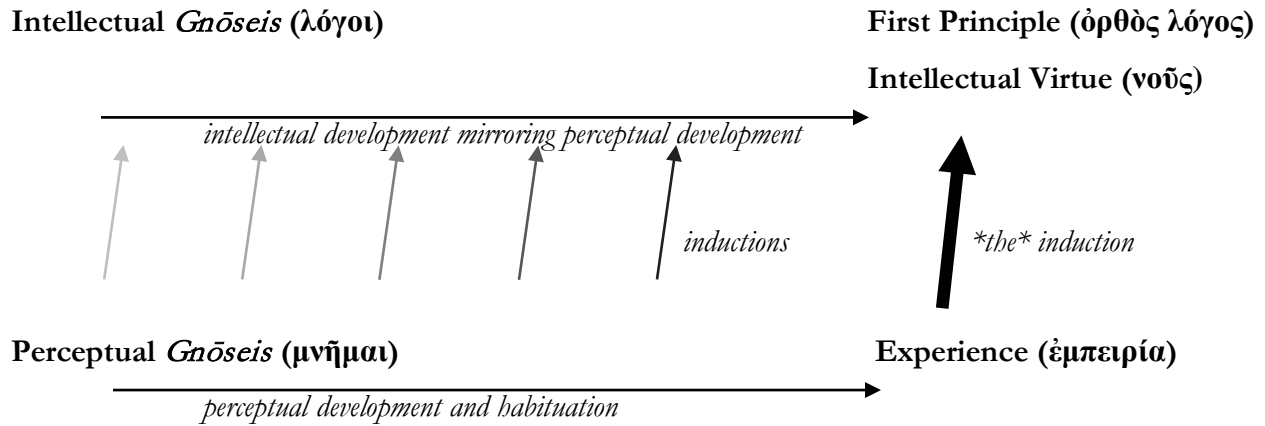
Aristotle goes on to call this grasp of first principles *nous*, which should be identified with the virtue discussed in *EN* VI.6. And further, given the ethical background, we know that every intellectual virtue is the *orthos logos* in its domain: art and practical wisdom with respect to variable things; science, *nous* and philosophic wisdom with respect to those things whose principles are invariable.³⁸⁸ Given that background, we know that the grasp of first principles constitutes an *orthos logos* in our chapter (though he does not use the term here). We can now note two differences between the ascents: the **First Ascent** does not proceed through experience and arrives at a *logos* without qualification, while the **Second Ascent** proceeds through experience and ends with the *orthos logos*.

³⁸⁷ *APo.* A.1 71a8-9. *Pace* Michael Frede’s “Aristotle’s Rationalism” (1996).

³⁸⁸ Cf. *EN* VI.2.

With respect to this first question, I suggest that both ascents are endorsed by Aristotle and that one of the differences I have noted explains the other: *logoi* in general can proceed inductively from any perceptual state or *gnōsis* (i.e. any memory), while the *orthos logos* proceeds inductively from *empeiria*. Experience, then, is a cognition of particulars and is a perfection of the perceptual faculty, being that perceptual *gnōsis* from which the correct universals can be derived. Distinguishing between these two *vertical* progressions helps to nuance our cognitive picture a bit. Anyone with a perceptual *gnōsis* is capable of having a *logos*, but this *logos* is bound to be deficient on account of inexperience. This distinction between two vertical progressions immediately suggests another distinction between two *horizontal* progressions, one at the level of perception and another that is mirrored inductively at the level of *logoi*. The following picture results:

Figure 7. The Cognitive Ascents in *Posterior Analytics* B.19



On the basis of a single perceptual *gnōsis* or memory we can form a *logos*, but in order to achieve the *orthos logos* we must gradually develop perceptually until we achieve *empeiria*. This process is perceptual habituation, a non-dianoetic process by which we acquire the appropriate perceptual *gnōsis*.³⁸⁹ Along the way we also update our *logoi* and perhaps prior *logoi* inform how we progress perceptually. In the end, the correct universal is grasped from the particular rightly conceived, from

³⁸⁹ As Hasper and Yurdin (2014) suggest quite convincingly, *empeiria* is associated very closely with habituation. I am happy to follow this suggestion in the light of *Meta.* A.1 981b2-5: τοὺς δ', ὥσπερ καὶ τῶν ἀψύχων ἔνια ποιεῖ μὲν, οὐκ εἰδότες δὲ ποιεῖ ἃ ποιεῖ, οἷον καίει τὸ πῦρ—τὰ μὲν οὖν ἄψυχα φύσει τινὲ ποιεῖν τούτων ἕκαστον τοὺς δὲ χειροτέχνους δι' ἔθος. This is also a nice confirmation of my own view: the preexisting *gnōsis* on which dianoetic learning is ultimately based is itself acquired by habituation and not dianoetically by preexisting *gnōsis*.

the cognitive state Aristotle calls *empeiria*. But it is just as available on this picture to speak of the *orthos logos* proceeding from its predecessor *logoi*, so that in important respects the *orthos logos* proceeds both from a *logos* and also inductively from *empeiria*. And here we have the resources to answer the second interpretive question in B.19 regarding the infamous “or”: the first principles of art and demonstrative science proceed inductively from experience *or considered in another way* they proceed from prior *logoi*, being the *orthos logos* and the limit of intellectual development.

4.2.5 Some Clarifications of the Alternative Picture

A point of clarification: the “or” is not disjunctive in the sense that sometimes first principles proceed from universals and penultimate *logoi* in the absence of *empeiria* while at other times they proceed from *empeiria* without *logoi* of the *that*. There is a way in which the “or” is truly disjunctive, but not as supplying two alternatives in the object itself being described. Nor is it right to say that I am proposing an inclusive disjunction, since I am not merely suggesting that, in some cases, both are rightly said to be sources from which the first principles arise. I am suggesting something much stronger, that the disjunction distinguishes two ways of conceiving of the sources from which rather than distinguishing two separable alternatives, one possible without the other. Accordingly, on my view, in all standard cases of learning and discovery first principles arise both from the whole *logos* and from *empeiria*. Aristotle is therefore pointing to two progressions from which the *orthos logos* results.

But why does Aristotle say “or from the *whole* universal having come to rest” (ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου)? I take it that this is the penultimate *logos*, which fully expresses the that but not the because, which captures all and only the relevant phenomena and conceives of them in the right way, yet without yet grasping the cause. For example, Aristotle on one occasion offers a *logos* of the lunar eclipse that does not express the cause but nevertheless is fine-grained enough to pick out all and only lunar eclipses, being a kind of penultimate *logos*.³⁹⁰ This use of “whole” to express extensional adequacy was introduced in the early chapters of the treatise.³⁹¹

³⁹⁰ Cf. *APo.* B.8 93a29-b8, esp. at a37-8: τὸ πανσελήνου σκιὰν μὴ δύνασθαι ποιεῖν μηδενὸς ἡμῶν μεταξὺ ὄντος φανεροῦ.

³⁹¹ The same passage is used by Hasper and Yuridin (2014), though in a significantly different way.

I say this is ‘in respect of the whole’ (κατὰ παντὸς) which is not said of one but not of another, nor at one time but not at another [...]. And there is a sign of this: for also the objections we bring to bear against those making claims ‘in respect of the whole,’ either if it does not hold for some case, or if it does not hold at some time.³⁹²

So, the whole *logos* is that penultimate *logos* which is existentially adequate and a complete grasp of the fact that, but falls short of the *orthos logos* in that it does not yet capture the reason why.

There are however exceptional cases, as when the that and the because are grasped at the same time. Aristotle describes the possibility of this situation early in *Posterior Analytics* B, in which one grasps the fact that and the reason why at the same time, perhaps when investigating the cause of a lunar eclipse from the lunar surface.³⁹³ Again, my disjunctive reading does not allow that in some cases one can arrive at the *orthos logos* purely logically and in other cases purely empirically. Rather, this disjunction is conceptual, so that in each case we can distinguish two predecessor states to the *orthos logos*, one logical and one empirical (to stretch these adjectives meaningfully). But if it is possible to grasp that fact that and the reason why at the same time (as Aristotle allows), there will not always be a *logos* merely of the fact that from which the *orthos logos* of the reason why follows. In these cases a single *logos* arises of both the fact that and the reason why together, from experience alone. Perhaps there are other predecessor *logoi* that are incomplete in various respects, but not the *logos kata pantos*: in this special kind of case as soon as one comes to a complete intellectual grasp of the fact that, one also grasps the reason why. The penultimate whole *logos* is swallowed up by and contained potentially within the ultimate *logos* of some first principle. I need not say more about this case, except to admit that my conceptually disjunctive reading allows for limit cases like this. Usually, however, the *orthos logos* arises in different ways from the whole *logos* and from *empeiria*. In non-standard cases, I am willing to allow the possibility of the *orthos logos* proceeding from experience without there ever being a distinct *logos* of only the fact that. What I must disallow, however, is that

³⁹² *APo.* A.4 73a28-9, 32-4: Κατὰ παντὸς μὲν οὖν τοῦτο λέγω ὃ ἂν ἢ μὴ ἐπὶ τινὸς μὲν τινὸς δὲ μή, μηδὲ ποτὲ μὲν ποτὲ δὲ μή, [...] σημεῖον δὲ καὶ γὰρ τὰς ἐνστάσεις οὕτω φέρομεν ὡς κατὰ παντὸς ἐρωτώμενοι ἢ εἰ ἐπὶ τινὶ μή ἢ εἴ ποτε μή.

³⁹³ Cf. *APo.* B.2 90a24-31 and B.8 93a14-21. A parallel in *APo.* A.31 is considered in chapter five.

the *orthos logos* could ever arise purely at the level of *logoi* without experience. In every case of someone truly in possession of the *orthos logos*, that person must also have *empeiria*.³⁹⁴

In addition to sorting out interpretive issues native to the *Posterior Analytics*, I suggest that my new reading can help make sense of puzzling remarks elsewhere. In the first place, we are now in a position to understand his remark in *Physics* I.1 that we proceed in inquiry from universal to particular. On my view, Aristotle is there describing the horizontal progression at the level of *logoi* proceeding with greater degrees of determinacy. Perception as such is not conceived of as something universal, but rather the *logoi* that one forms on the basis of perception in early stages of inquiry. Indeed, throughout I have suggested a distinction between perceptual *gnōseis* as such and the *logoi* that they license. In *Physics* I.1, therefore, Aristotle is describing going from inexperienced to experienced *logoi*. A similar thought might be operative in *Prior Analytics* B.21, when Aristotle compares thinking with a universal knowledge (τῆ καθόλου) and with a proper knowledge (τῆ οἰκείᾳ). There he gives the Triple Scheme in a slightly different mode, suggesting that one can possess universal knowledge, which is said to be incorrect or inadequate in some way, and proper knowledge, which are both opposed to activity (τῷ ἐνεργεῖν).³⁹⁵ The point here is that we can conceive of early stages of inquiry in perceptual or in intellectual terms; if the latter, we have two passages in which Aristotle disapprovingly describes these early and inexperienced *logoi* as *katholou*.³⁹⁶ In view of the account I have here proposed, we have the resources to understand this.

In this section I offered an interpretation of *Posterior Analytics* B.19 where *empeiria* is a *gnōsis* of particulars from which the *orthos logos* arises by induction, but without which *logoi* remain possible,

³⁹⁴ Another way to put the point: every *logos* that outstrips perception is empty. Aristotle often speaks of *kenoi logoi* in this very way. For a thorough treatment of the issue, see Sean Kelsey's "Empty Words," in *Theory and Practice in Aristotle's Natural Science*, ed. David Ebrey (Cambridge 2015).

³⁹⁵ *APr.* B.21 67a26-b7: Τῆ μὲν οὖν καθόλου θεωροῦμεν τὰ ἐν μέρει, τῆ δ' οἰκείᾳ οὐκ ἴσμεν, ὥστ' ἐνδέχεται καὶ ἀπατᾶσθαι περὶ αὐτά, πλὴν οὐκ ἐναντίως, ἀλλ' ἔχειν μὲν τὴν καθόλου, ἀπατᾶσθαι δὲ τὴν κατὰ μέρος. ὁμοίως οὖν καὶ ἐπὶ τῶν προειρημένων· [...] ὥστε δῆλον ὅτι καὶ εἰ τὸ μὲν οἶδε τὸ δὲ μὴ οἶδεν, ἀπατηθήσεται· ὅπερ ἔχουσιν αἱ καθόλου πρὸς τὰς κατὰ μέρος ἐπιστήμας. οὐδὲν γὰρ τῶν αἰσθητῶν ἔξω τῆς αἰσθήσεως γενόμενον ἴσμεν, οὐδ' ἂν ἠσθημένοι τυγχάνωμεν, εἰ μὴ ὡς τῷ καθόλου καὶ τῷ ἔχειν τὴν οἰκείαν ἐπιστήμην, ἀλλ' οὐχ ὡς τῷ ἐνεργεῖν. τὸ γὰρ ἐπίστασθαι λέγεται τριχῶς, ἢ ὡς τῆ καθόλου ἢ ὡς τῆ οἰκείᾳ ἢ ὡς τῷ ἐνεργεῖν, ὥστε καὶ τὸ ἠπατησθαι τοσαυταχῶς. οὐδὲν οὖν κωλύει καὶ εἰδέναι καὶ ἠπατησθαι περὶ ταῦτό, πλὴν οὐκ ἐναντίως.

³⁹⁶ Both passages, *Phys.* I.1 and *APr.* B.21 deserve independent treatments, but I cannot give them here. Cf. e.g. McKirahan (1983), Gifford (1999), Labarge (2004), and Smith (1989). Their attention is focused mostly earlier in the chapter where the Meno paradox and recollection are mentioned.

even if such intellectual states do not count as virtuous. To be virtuous, I have argued, such intellectual states or *logoi* must proceed from *empeiria*. So, Aristotle's purpose in B.19 is not to explain how we could ever achieve cognition of universals on the basis of particulars, but rather how we come to grasp the *orthos logos* on which the whole of art and demonstrative science rests.

4.3 CONTEMPLATING IN ORDER TO LEARN

A question, however, now arises about how one comes to be experienced. I have solved one set of problems about the acquisition of first principles by insisting on a robust conception of *empeiria*. Now, however, I must answer a new question: what accomplishes the process of perceptual habituation resulting in the perceptual virtue of *empeiria*? If we consider the cases of inexperienced *logoi*, Aristotle's criticism regards their methodology: either they were not asking the right questions, considering the right cases, or conceiving of the phenomena in the right way. Perhaps the best example is dissection: in order to grasp thoroughly an animal's internal organs and blood vessels, one must dissect it properly. One must strangle the animal rather than kill it by cutting, because if the blood is drained, one will not be able to see what is there to be seen.³⁹⁷ The achievement here is clearly a perceptual grasp of the *phenomena*, but the process by which it is achieved is by no means merely perceptual. One must already know how to dissect an animal in order to achieve *empeiria*. This raises a bit of a puzzle.

Let us try approaching the issue in a different way. In what way does induction produce the first principles? I have argued that induction is operative in two places in learning. First and most prominently, we grasp the first principles by induction from *empeiria*, itself a grasp of particulars. Also in some lesser way I have argued that we perform inductions throughout the process of learning, so that one arrives at preliminary *logoi* even before one comes to be perceptually experienced. This distinction in two sorts of vertical ascents gives horizontal dimensionality to the picture I have offered.

³⁹⁷ HA 3.3 513a13-15: Χαλεπῆς δ' οὔσης, ὥσπερ εἴρηται πρότερον, τῆς θεωρίας ἐν μόνοις τοῖς ἀποπεπνιγμένοις τῶν ζώων προλεπτυνθεῖσιν ἔστιν ἰκανῶς καταμαθεῖν, εἴ τινα περὶ τῶν τοιούτων ἐπιμελής. Cf. Yurdin, "Aristotle on Learning to be a Natural Scientist" (2015) and Lennox, "Aristotle, Dissection, and Generation: Experience, Expertise, and the Practices of Knowing," in A. Falcon and D. Lefebvre eds. The Generation of Animals and Aristotle's Philosophy (2015). Both give distinct though friendly readings of this.

But should we also conceive of the process toward *empeiria* as inductive? I think this would be a mistake, and for two important reasons: on my view, *empeiria* is itself a grasp of particulars, so that it is not the sort of thing that induction can produce. In addition, I have argued that *empeiria* is the perceptual *gnōsis* from which we induce the first principles, being that preexisting *gnōsis* from which this form of dianoetic learning proceeds. However, if we conceive of the acquisition of *empeiria* itself as a case of dianoetic learning by induction, then we soon face a regress. I have suggested instead that whatever perceptual process results in *empeiria* must be a kind of perceptual habituation. If this is right, then induction—being an argumentative and indeed *logical* form—cannot be the process responsible for producing *empeiria*—being perceptual *gnōsis* of particulars.

How ought we to accommodate these two points, first that *empeiria* is produced by an intellectually driven process, but one which is not a case of dianoetic learning? Here it may be helpful to think of moral or productive habituation: in those cases it is true that students learn by doing the very things they are learning to do. But as we have seen, this cannot be the whole story. Someone or something must give shape to that prior activity: when we say that someone has been habituated, that often implies that someone has been doing the habituating. My (and Aristotle's) point about prior activity and learning-by-doing was not meant to rule out the distinctive contribution of the teacher, but rather to specify it. The teacher does not use the student as a mere tool, even in cases of mere habituation, but neither is the teacher superfluous. Rather, the teacher gives shape to the student's own activity. In the habituated case, to be sure, there is no requirement for preexisting *gnōsis* as in dianoetic learning; but so much the better to understand the case of perceptual *habituation*.

Perhaps, then, we can speak in a similar way about the process that is productive of *empeiria*. Perhaps the teacher gives shape to and habituates the student's perceptual faculties, by dissecting animals or diagrams for them so that they can make the right inductions on the basis of the particulars rightly conceived. My account, therefore, suggests a distinction between two kinds of induction and a further distinction between two kinds of intellectual activity in the learning process. The latter distinction is between inductive activity generally, and the habituating activity of the teacher. All students must perform inductions and intellectually consider the perceptual particulars presented to them. And indeed, this activity happens quite naturally for humans. We form *logoi* on the basis of perceptual *gnōseis* as naturally as we and other animals form memories on the basis of active perceptual episodes. So, the student must form his own *logoi* in view of what is perceptually available to him. This holds even for those students that leave the classroom with the wrong

conceptions: everyone must contemplate in order to learn, regardless of whether what one learns is right or wrong, virtuous or not.

But teachers may facilitate their success by making those perceptual particulars particularly clear, so that *logoi* derived from them more closely approach the correct account, the *orthos logos*. And it is this process that Aristotle seeks to explain in *Posterior Analytics* B.19, as I have argued. After all, achieving *empeiria* of the internal organs of frogs demands that one have seen a properly dissected frog, something rarely produced by chance or in the course of nature: someone, either a teacher or oneself (according to one's own ordered method), must produce the correct dissection and, by extension, must habituate one's perceptual faculty with respect to the object in question. This habituating activity, however, is very different from the more receptive and speculative intellectual activity whereby we form and consider *logoi* by induction. It is this distinctive intellectual activity that is productive of *empeiria* to which I turn in the following chapter.

**5. COMING TO KNOW BY MAKING:
DISCOVERING PARALLELS WITH *DE ANIMA* III.5**

Εικότως ἄρα, ἦν δ' ἐγώ, ἐν τοῖς τοιούτοις πρῶτον μὲν πειρᾶται λογισμὸν τε καὶ νόησιν ψυχῇ παρακαλοῦσα ἐπισκοπεῖν εἴτε ἐν εἴτε δύο ἐστὶν ἕκαστα τῶν εἰσαγγελλομένων.

---Πῶς δ' οὔ;

Οὐκοῦν ἐὰν δύο φαίνεται, ἕτερόν τε καὶ ἐν ἑκάτερον φαίνεται;

---Ναί.

Εἰ ἄρα ἐν ἑκάτερον, ἀμφοτέρα δὲ δύο, τά γε δύο κεχωρισμένα νοήσει· οὐ γὰρ ἂν ἀχώριστά γε δύο ἐνόει, ἀλλ' ἓν.

---Ὅρθῶς.

Μέγα μὴν καὶ ὄψις καὶ σμικρὸν ἐώρα, φαμέν, ἀλλ' οὐ κεχωρισμένον ἀλλὰ συγκεχυμένον τι. ἦ γάρ;

---Ναί.

Διὰ δὲ τὴν τούτου σαφήνειαν μέγα αὖ καὶ σμικρὸν ἢ νόησις ἠναγκάσθη ἰδεῖν, οὐ συγκεχυμένα ἀλλὰ διωρισμένα, τοῦναντίον ἢ ἄκείνη.³⁹⁸

In this chapter I propose an interpretation of the active intellect of *de Anima* III.5 that is informed by parallel passages in the *Metaphysics* and the epistemological discussion of the preceding chapters of this dissertation. While the parallel passages are not strictly psychological, they help to explain the intellectual activity that Aristotle plausibly attributes to the active intellect. Unlike other passages from the *Metaphysics*, for example those about divine thinking in *Metaphysics* Λ, these passages have not been widely noted in connection with *de Anima* III.5, and so support an interpretation of the

³⁹⁸ *Rep.* VII 524b3-c8.

active intellect which is not usually entertained, at least not in recent years.³⁹⁹ The connection may not be immediately clear, so the passage will require some introduction and some argumentative context in order to prepare for it. Having established this connection, I shall return to loose ends from the second chapter.

5.1 INTRODUCTION AND RECAP

Having drawn conclusions about intellectual activities, in particular those that are involved in the acquisition of intellectual virtue, we are now in a position to return to the question from the end of the second chapter. There we were left with an interpretation of the active intellect of *de Anima* III.5 that is not usually entertained. I argued that the active intellect's characteristic activity was neither the activation of particular episodes of intellectual thinking, nor the actual possession of knowledge, nor the guarantee of the general intelligibility of the world. Rather, on my view, the active intellect is responsible for making objects available for thinking, making them to be actually intelligible for individual knowers. My argument rested, in part, on a reading of the Light Analogy that focused on the absence of a receptive faculty on the visual side of the analogy. I argued that the action of light on a colored object must be understood as prior to the action of a (now illumined) colored object on a sighted animal's visual faculty. For the purposes of the Light Analogy in III.5, I argued, Aristotle wants to focus on this prior relation of agent and patient, one which results in the prior activity of illuminating some previously unlit colored object. This accords with an intuitive way of thinking about the contribution and effect of light on colored things and of color on vision, respectively. So, on this view, light does not make the object's color *simpliciter*, nor does it directly make the object to be seen.

Analogously, on my view, the active intellect is not posited to answer an ontological demand about the intelligible character of the world in general and how it could ever be known by us (or by

³⁹⁹ I admit, perhaps daringly, that I have not found another author who has made this connection, including commentators with whom I share broad interpretive stances such as Aquinas and Brentano. I also note the paucity of commentary on this passage even on its own. Makin (2006) is one of the few recent discussions of the examples and the possible upshot; most book-length studies of *Metaphysics* Θ such as Blair (1992), Witt (2003), and Beere (2009) do not mention the passage at all. Most other recent treatments, including Burnyeat (1984) and Hasper (2011) focus only on how to understand the geometrical examples themselves.

beings like us), nor is it posited to answer an immediate psychological demand about the mechanics of thought and how particular episodes of intellectual activity ever get going. Rather, on my view, it is posited in response to an *epistemological* need regarding the process of learning and how intelligible content becomes available for an individual knower to grasp and contemplate: abstractly and in short, the active intellect activates potentially intelligible objects. This was the result of my interpretive investigation into *de Anima* III.5 in the second chapter. But we were immediately faced with a pressing question: where in Aristotle's thought do we find such an activity or the need for one?⁴⁰⁰ And if there is no need for such an activity, for what other activity could the active intellect be responsible?

My hypothesis in the face of this important question was that it is to be found in the activities of teaching, learning, and discovery. So, in the intervening chapters I have focused on this process of learning and the different intellectual activities that seem to be involved in that process on Aristotle's view. I first argued that for every case of learning, prior activity of an appropriately identical sort brings about the development of the capacity in question. In these cases, the capacity that is exercised in prior activity is the very same capacity which undergoes development as a result. What is acquired through learning, such as knowledge or moral virtue, is therefore not itself a capacity (*δύναμις*) without qualification but rather a developed state (*ἔξις*) of a capacity, a capacity which the student must have already possessed, though previously in an undeveloped state.⁴⁰¹ As a result, theoretical knowledge is not passively absorbed from a teacher like sight put into blind eyes (to recall a Platonic point), but rather involves the learner himself engaging in contemplative activity throughout, although in an undeliberate, unrefined, or imperfect way.

This clarification helped to resolve a difficulty about Aristotle's account of learning: whenever we learn to φ by φ -ing, we surely do not learn by exercising the very knowledge which has yet to be acquired; we rather exercise the intellectual capacity which comes to have and indeed constitute the developed state of knowledge as a result. In these cases, then, the capacity to learn comes to constitute the state of knowledge that is possessed by the knower: a single capacity for intellectual activity has developed into and become knowledge, which, as such, is a developed, stable,

⁴⁰⁰ Recall, for example, Johansen (2012) who at 239 n39 expressed skepticism that such an activity was needed for *nous* against Aquinas.

⁴⁰¹ Cf. e.g. *EN* II.5, V.1 and VI.1-6. Aristotle is explicit that knowledge, art, and virtue are all *hexeis* and not *dynameis simpliciter*. The idea that the grasp of first principles is a *state* and not a *capacity simpliciter* is also important to the argument of *APo*. B.19, as we have seen.

and excellent state of that very same capacity. It is not by exercising knowledge that we come to have it, but rather by exercising an intellectual capacity we already had (what I have called *nous-as-dynamis*) that the very same capacity comes to have and to be knowledge as a developed state.⁴⁰² Aristotle’s intuitive idea—that we come to be lyre-players by playing the lyre, temperate by doing temperate things, and elephant experts by contemplating elephants—can be defended as coherent with these more metaphysical distinctions in place. In particular, this is now possible in view of my alternative interpretation of Aristotle’s claim in *de Anima* II.5 that the unlearned person is “capable” (*δυνατός*), namely that he is already capable of engaging in the activity toward which the capacity, once it has been developed, is directed.

But when applied to the properly intellectual case and to features distinctive to it, moving beyond this generic account of learning-by-doing that applies also to cases of merely habituated states, this idea of prior activity and prior capability seemed to be in tension with—or otherwise in need of explanation in respect to—Aristotle’s explicit insistence on some preexisting *gnōsis* from which dianoetic learning proceeds in every case. That is to say, when it came to properly intellectual or dianoetic learning, Aristotle seems to be committed to two ideas that must be joined together in a single account, thus standing in need of further clarification: all learning proceeds both from prior activity of the intellectual faculty itself, which is in some substantial respect the same activity as the expert, and also from some preexisting *gnōsis*, which may or may not itself already be a properly intellectual *gnōsis*, depending on the case. My suggestion is to say that memories and experience are the habituated and cognitive states (*ἔξεις*) of the perceptual faculty which constitute the preexisting *gnōseis* from which intellectual activity ultimately proceeds.⁴⁰³ Of course, such *gnōseis* are bounded by particularizing conditions insofar as they are perceptual states.⁴⁰⁴ As a result, induction is the only form of reasoning available which proceeds from *gnōseis* of this sort.⁴⁰⁵ The intellect comes to generalize and consider these particulars in a universal way, thinking the forms in the images that are

⁴⁰² The same holds with other acquired “capacities” like art and moral virtue. In the case of moral virtue, it is a moral capacity which is exercised beforehand, not an intellectual one. The point, however is not usually recognized for capacities not coming to be by habituation. Recall *Meta.* Θ.5 1047b31-35.

⁴⁰³ Ultimately, as we have seen, all intellectual activity is dependent on a grasp of immediate first principles, or at least a provisional posit of them, which in both bases proceeds from perception.

⁴⁰⁴ Cf. *APo.* A.31 87b28-35.

⁴⁰⁵ Cf. *APo.* A.1 71a1-9.

already, as it were, before one's eyes.⁴⁰⁶ Similarly, one comes to grasp the cause and the explanation *within* one's grasp of the *phenomena*.

Yet I pointed out that often inquiry does not proceed in a straightforward way: investigators and students do not first secure their memories into an organized experience and only afterwards perform intellectual inductions on the fully developed perceptual states constituting experience.⁴⁰⁷ Rather, as is much more common, in natural philosophical inquiry at any rate, inductions and intellectual activities begin far earlier in the learning process. I have argued that in *Posterior Analytics* B.19 Aristotle speaks as if *logoi* without qualification can proceed straightaway from memories: experience is only mentioned when the resulting *logoi* are the *orthoí logoi* that constitute the principles of art or science, the intellectual virtue of *nous*.⁴⁰⁸ Against a popular reading of B.19, I have suggested that humans are capable of performing inductions and reasoning intellectually about perceptions and memories alone, even if one should fail to possess an experienced—that is, a virtuous or excellent—perceptual state.

⁴⁰⁶ Cf. *de An.* III.7 431b3.

⁴⁰⁷ Cf. e.g. *PA* I.1 639b5-10: Νῦν γὰρ οὐ διώρισται περὶ αὐτοῦ οὐδέ γε τὸ νῦν ῥηθησόμενον, οἷον πότερον καθάπερ οἱ μαθηματικοὶ τὰ περὶ τὴν ἀστρολογίαν δεικνύουσιν, οὕτω δεῖ καὶ τὸν φυσικὸν τὰ φαινόμενα πρῶτον τὰ περὶ τὰ ζῶα θεωρήσαντα καὶ τὰ μέρη τὰ περὶ ἕκαστον, ἔπειθ' οὕτω λέγειν τὸ διὰ τί καὶ τὰς αἰτίας, ἢ ἄλλως πως. Here Aristotle raises the question whether natural philosophical inquiry will proceed in the same way as mathematicians who are studying astronomy, whereby one simply becomes experienced as to the phenomena and applies mathematical forms already independently developed. One might think that his point is settled and straightforward, as he says soon later at 640a13-15: Ἔοικε δ' ἐντεῦθεν ἀρκτέον εἶναι, καθάπερ καὶ πρότερον εἶπομεν, ὅτι πρῶτον τὰ φαινόμενα ληπτέον περὶ ἕκαστον γένος, εἴθ' οὕτω τὰς αἰτίας τούτων λεκτέον, καὶ περὶ γενέσεως. My take on this point, which I shall not pursue here, is that in natural philosophical inquiry we must discover the forms themselves *in* the *phenomena*, rather than merely applying forms that we already have in separation from the *phenomena*. While we always think the forms in the images, how we come to discover those forms differs depending on the *genus* of theoretical knowledge (mathematical, physical, or metaphysical). I take it that one must develop some provisional theory or account of the cause in order to aid in the very observation of the *phenomena*, just as one must have some provisional classification of likenesses between different species in order to study the parts of animals under common headings rather than singly and severally. Though I think this is an important point, one which addresses differences in method between mathematical and physical contexts, and indeed differences which follow from differences in the objects of knowledge themselves, I nevertheless must set the issue aside for a later time, letting my hastily concluded *logos* remain merely provisional for now.

⁴⁰⁸ Cf. *APo.* B.19 100a1-9.

This approach also made sense of a remark in *Metaphysics* A.1 where Aristotle mentions someone in possession of a (and perhaps *the*) *logos* who has not yet achieved experience.⁴⁰⁹ Similarly in many scientific contexts, Aristotle criticizes other scientific theorists and their *logoi* on the grounds that they are insufficiently experienced with the facts: in these cases, scientists indeed possess *logoi* but not yet experience.⁴¹⁰ My alternative proposal also illuminated *Physics* I.1 in which Aristotle claims that we proceed from universal to particular, just as children begin by calling all men “father” and all women “mother.” I argued that these children are indeed employing *logoi* (or something rather like them, hence the analogy with natural scientific inquiry) but, like the inexperienced scientists, do not yet have experience or the *orthoï logoi* that issue immediately from it. Perception and memory alone, then, are sufficient *gnōseis* for induction and for the production of *logoi* in the intellect, with *logoi* understood in the broad sense which includes false or ill-defined theories or accounts. Experience, on my view, is that perfect *gnōsis* and excellent *hexis* of the *perceptual* faculty from which it is possible for one to achieve the *orthoï logoi* by induction.

In this way, then, the intellectual faculty itself is active throughout the process of learning, gradually coming to refine its *logoi* on the basis of finer-grained perceptual engagement with a specific domain.⁴¹¹ It is true that experience, once achieved, hands on to the intellect the first principles, the *orthoï logoi*, in a given domain.⁴¹² However, students and inquirers typically are reasoning universally and forming generalizations far earlier in the process of learning and discovery. For this to be possible, *nous-as-dynamis* must be posited as present and, indeed, as active throughout the entire process. *Pace* Frede (and others like him), it is not sufficient to say that perception, memory, and experience are at work in coming to grasp first principles: potential intellect (*nous-as-*

⁴⁰⁹ Cf. *Meta.* A.1 981a13-24.

⁴¹⁰ Cf. e.g. *de Resp. passim*.

⁴¹¹ I have argued previously that this way of conceiving things makes room for an alternative interpretation of the infamously difficult “or” at *APo.* B.19 100a6-9. Since the *orthoï logoi* which are the principles of art and science can be seen both as arising from experience and as continuous with prior *logoi* that were considered in preceding stages of inquiry, it can be said that these principles arise from experience in one respect and from the whole universal, i.e. the penultimate universal, in another respect. So the “or” is conceptually disjunctive even though every principle arises in a way from both sources. I therefore reject the much more common exegetical and corrective readings of this “or.”

⁴¹² Cf. *APr.* A.30, esp. at 46a17-24.

dynamis) must already be operative from the earliest stages of intellectual learning.⁴¹³ Nor is it right to say that this prior intellectual activity is habituation, since this prior activity is by *logos* not by *ethos*, proceeding according to some preceding *gnōsis*.⁴¹⁴ Nor again is it right to characterize this prior activity as simply another aspect of deductive or demonstrative activity, since this prior activity proceeds by considering particulars in a universal way, perhaps sometimes even before one ever has conceived of things in deductive terms following upon those principles.⁴¹⁵ At least one part of this prior intellectual activity, then, is coming to consider a universal in some particular, an activity which, at least in many cases, begins long before one comes to contemplate the right universal in the particular clearly conceived.

But with this discovery came another pressing need: where in the epistemology do we find such prior intellectual activity? In the case of coming to grasp first principles, I have proposed that the inductive process itself is a promising but not unproblematic candidate. It is promising because Aristotle is clearly committed in B.19 to the idea that we come to get first principles by induction.⁴¹⁶ But it is somewhat problematic on several counts: first, because induction (as well as deduction) seems to have more to do with the reliance on a preexisting perceptual *gnōsis* than on the prior activity of the intellectual faculty itself. We might think that the constraint of the wrong learning principle is satisfied here. While induction explains the move from preexisting *gnōsis* to the grasp of a first principle, thereby satisfying our need for a preexisting *gnōsis*, it might seem that some other activity or process must account for the prior activity of the intellectual faculty itself. Induction seems to involve the transition from one sort of *gnōsis* to another, which seems to be wholly different from the student engaging in the same activity as the expert he is trying to become. Furthermore, at times Aristotle speaks of induction as if it proceeds not from particular to universal,

⁴¹³ Cf. e.g. Frede (1996a) 170, and Fine (2014) 221-225.

⁴¹⁴ Cf. *Meta.* Θ.5 1047b31-35. Hamlyn (1976) 175ff., Kosman (2003) 352, Bronstein (2008) 210-216.

⁴¹⁵ *Pace* Kosman (1973).

⁴¹⁶ As I have discussed previously, I am not convinced by arguments that say that induction gets us the principles, but not *as principles*. While I grant that we must ultimately grasp principles as principles, and for that matter causes as causes, essences as essences, and universals as universals, I am not convinced that induction only gets us these things in the weak or perhaps “merely extensional” way. Rather, it has been my project to develop a view according to which induction supplies the principles as such. The aim of the following sections will be, in part, to complete such a view. Cf. e.g. Kosman (1973) 384, Charles (2002) 266, McKirahan (1992) 258, Bronstein (2010) 187-8, Gasser (2015) 2, *inter alia*.

but the other way around, for example when one recognizes that some feature holds of this particular triangle.⁴¹⁷ Finally, even if these other concerns can be adequately addressed, the learning process described above presupposes not only some generic ability to form generalizations and to think universally on the basis of some particular. Rather, this prior activity must itself be guided and presupposes also a more skillful ability to expand and refine one's very perceptual *gnōseis* so that one can contemplate the correct universal in the particular correctly conceived. Accordingly, on this last worry, we seem to have two prior intellectual activities involved in inductive learning.

I wish to set aside some of the former worries about induction; I focus on the third and perhaps most pressing concern in the present chapter. As a further and not unrelated point, in the previous chapter I did some work gesturing at a distinction between two prior intellectual activities, arguing that both of them must be involved in all cases of intellectual learning. On the one hand, we have the prior activity of the student engaging in the activity of the expert—in his own distinctive way, to be sure—by means of which a *hexis* gradually settles in. But this prior activity can cut both ways, as it were: we come to be temperate by doing temperate things, but we also come to be *intemperate* by doing intemperate things. Similarly, in the theoretical case: we come to know about elephants by considering elephants in the right way, we come to possess a mistaken theory or conception of elephants by considering them in the wrong way. In short, both good and bad states develop by prior activity of a similar sort.⁴¹⁸ Therefore, there must be some further intellectual activity which guides and gives shape to the student's prior activity, so that it results in *successful* learning.

⁴¹⁷ Cf. *APr.* B.21 67a5-26. At this juncture, one might worry (perhaps following Bronstein) that I have been uncaring in what I take to be “inductive” for Aristotle. He tells us induction is reasoning from the particular to the universal in *APo.* A.1. However, this seems to contradict other uses of the term, perhaps in *APr.* B.21 where a recognition of a universal in a particular instance is said to be inductive. Although I do not go into much detail on this point, on my view induction is in every case coming to grasp a universal in a particular, contemplating a form in an image: for this reason inductive arguments can produce new knowledge of principles and they can express knowledge of principles which is already possessed. A similar distinction can be found in the deductive case between demonstrations which are productive of new knowledge and those which constitute and express it once it is already possessed. And on both sides of the analogy it need not be truth-entailing: inductions and deductions can produce new conclusions or they can express conclusions already held to be true, even if they fail to be. I mention this issue in the previous chapter, and will not consider it at greater length here.

⁴¹⁸ Cf. *EN* II.1 1103b6-25 for a familiar statement of this view.

In the first place, then, prior contemplation or prior intellectual activity is a *receptive* activity according to which one must intellectually consider the very same objects one is learning about. And as one learns more and more about these objects, one is forming progressively more refined *logoi* that eventually approach and constitute the *orthoí logoi*. In this way everyone contemplates in order to learn, considering elephants in order to learn about elephants; even the most passive and uncurious student must perform at least this prior theoretical activity if he is to learn in an intellectual way.⁴¹⁹ This much is routine given the argument of the preceding chapters.

Our present question, however, concerns the second sort of intellectual activity, a distinctively active and perhaps even productive activity which guides and governs that more receptive one, particularly in those cases where the subject matter is initially obscure. An investigation into this more productive activity has been recommended by the thought that experience itself is often the *product* of an intellectual engagement with some domain, and not merely the *source* of intellectual first principles: some intellectual activity is responsible for guiding one's perceptual engagement with a domain in order to achieve experience in the first place. This intellectual activity is in most cases accomplished by a teacher, it would seem, but could also be achieved simply by favorable perceptual circumstances, or even by an inquisitive student himself. I did little more than distinguish these two activities in the preceding chapter, noting how the role of this second activity generates some trouble in understanding Aristotle's account of induction. In other words, I showed in the preceding chapter *that* there is some such distinct second activity, leaving *what* it is for later consideration. So, it is this second activity and its relationship with induction to which I now turn.

5.2 TWO ASPECTS OF INDUCTION

I begin with a remark on Aristotle's view of induction, with an aim to understand its role in *Posterior Analytics* B.19 and in the acquisition of the immediate first principles of scientific knowledge. It is reasonable to suppose, in the first place, that induction (ἐπαγωγή) is correlative with deduction

⁴¹⁹ A related point is made by Peter Geach, *Mental Acts* (1957) §6 p. 19: "There are conceivable ways of acquiring [abilities] to which we should unhesitatingly refuse to apply the term "learning". If, as in a story of Stephen Leacock's, a boy could come to know Latin by submitting to a brain operation, he would not have *learned* Latin from the surgeon."

(συλλογισμός), given several mentions of the two generic logical forms, sometimes by way of comparison, other times by way of contrast. Perhaps most notably at the beginning of the *Posterior Analytics*, Aristotle writes:

All teaching and all dianoetic learning comes to be from a preexisting *gnōsis*. This is clear to those that consider all cases: for both the mathematical sciences and each of the other arts accrue in this way. And similarly also concerning the *logoi*, some are through demonstrations and others through induction: for both accomplish teaching through things previously known, the former assuming as from things grasped, the latter showing the universal through the particular being clear.⁴²⁰

In either case, whether comparing the two or contrasting them, in many passages Aristotle has in mind a certain form of thinking, of proceeding from some *gnōsis* without qualification to some *logos*, in either case without necessarily any substantive commitment to what is, in fact, true or correct. That is to say, in either deduction or induction, it is reasonable to think that the result of one's reasoning need not be the *orthos logos*, but simply some *logos* without qualification.

A comparison with the deductive case can be helpful in further specifying what I mean. Aristotle distinguishes “deduction” and “demonstration,” arguing that something can be a deduction without revealing anything that is true, or if it produces truth it does not do so in the proper way. A demonstration, in contrast, is a deduction of a particular sort according to which we know something to be true.⁴²¹ We might say that the deductive mode is a form of argument in general, independent of any particular logical or argumentative matter, while demonstrations are deductive arguments whose material content is of a certain character, namely that which is productive and constitutive of knowledge (ἐπιστημονικόν).⁴²² It is important to note, then, that demonstrations are

⁴²⁰ *APo.* A.1 71a1-9: Πᾶσα διδασκαλία καὶ πᾶσα μάθησις διανοητικὴ ἐκ προϋπαρχούσης γίνεται γνώσεως. φανερόν δὲ τοῦτο θεωροῦσιν ἐπὶ πασῶν· αἱ τε γὰρ μαθηματικαὶ τῶν ἐπιστημῶν διὰ τούτου τοῦ τρόπου παραγίνονται καὶ τῶν ἄλλων ἐκάστη τεχνῶν. ὁμοίως δὲ καὶ περὶ τοὺς λόγους οἱ τε διὰ συλλογισμῶν καὶ οἱ δι' ἐπαγωγῆς· ἀμφοτέρω γὰρ διὰ προγινωσκομένων ποιοῦνται τὴν διδασκαλίαν, οἱ μὲν λαμβάνοντες ὡς παρὰ ξυγιέντων, οἱ δὲ δεικνύοντες τὸ καθόλου διὰ τοῦ δήλον εἶναι τὸ καθ' ἕκαστον.

⁴²¹ Cf. *APo.* A.2 71b17-19: “But now we say that we know through demonstration. And by ‘demonstration’ I mean a scientific deduction: and by ‘scientific’ I mean that according to which we can know by possessing it.” φαμὲν δὲ καὶ δι' ἀποδείξεως εἰδέναί. ἀπόδειξιν δὲ λέγω συλλογισμὸν ἐπιστημονικόν· ἐπιστημονικόν δὲ λέγω καθ' ὃν τῷ ἔχειν αὐτὸν ἐπιστάμεθα.

⁴²² Cf. *APo.* A.2 71b20-25: “If then ‘to know’ is such as we laid down, it is also necessary that demonstrative knowledge is from premises that are true, primary, immediate, more knowable, prior

formally deductions, whole and entire: it is not as if they are a special subclass of deductions that contain, in addition, some extra premise or deductive step. Rather, what makes a particular deduction to be demonstrative and constitutive of knowledge is the character of the terms, premises, and conclusions themselves. In short, the difference between demonstrative and non-demonstrative deductions is material, not formal, and the deductive logical form *as such* does not track or necessarily entail the truth. Deductions are called “demonstrations” or “demonstrative,” on the other hand, only when the deduction in question successfully expresses the truth and expresses it in a very special way.

So far, this is a routine point made in introductory philosophy classrooms, contrasting logical validity and soundness. It becomes an interesting point for our purposes, however, when we realize that Aristotle does not explicitly make an analogous distinction for the inductive case, though it may very well be implicit in his account. So while not found explicitly in Aristotle, we might reasonably entertain a distinction between inductive arguments which are merely adequate generalizations on the basis of some perceptual particular and those which, in addition, give us a correct grasp of first principles. I propose, then, that the distinction between logical form and matter may be at work also in inductions, generating a distinction that is related in some broad and analogous way to deductive validity and soundness. I raise this possibility in view of those who are skeptical that induction alone could produce a grasp of first principles. If such a distinction between merely formal inductions (i.e. a mere generalization from particular to universal) and robustly *noetic* inductions is possible (i.e. inductions which produce the virtue of *nous* in a given domain), then we come some way to answering this skepticism regarding whether we can come to grasp first principles by induction.⁴²³

One may worry, however, that there may not be such a distinction to which we can appeal. Perhaps someone will object that what it means to be an adequate inductive inference is to have gotten the generalization right. On this view, inductive adequacy and inductive success do not come

to, and the cause of the conclusion: for thus will the principles be proper to that which is being proven. For while deduction will be possible even without these, demonstration will not be: for it will not produce knowledge.” Εἰ τοίνυν ἐστὶ τὸ ἐπίστασθαι οἷον ἔθεμεν, ἀνάγκη καὶ τὴν ἀποδεικτικὴν ἐπιστήμην ἐξ ἀληθῶν τ' εἶναι καὶ πρώτων καὶ ἀμέσων καὶ γνωριμωτέρων καὶ προτέρων καὶ αἰτίων τοῦ συμπεράσματος· οὕτω γὰρ ἔσονται καὶ ἀρχαὶ οἰκεῖαι τοῦ δεικνυμένου. συλλογισμὸς μὲν γὰρ ἔσται καὶ ἄνευ τούτων, ἀπόδειξις δ' οὐκ ἔσται· οὐ γὰρ ποιήσει ἐπιστήμην.

⁴²³ I use “noetic” here to name those inductions which are productive or expressive of *nous*-as-virtue, just as we might use “scientific” or “epistemic” (following Aristotle) to name those deductions which are productive or expressive of *epistēmē*.

apart even conceptually, and a faulty inductive inference, for example on the basis of an exceptional case, would simply not count as an adequate induction, or perhaps as an induction at all, on this view. I cannot reply to this particular worry sufficiently, insofar as it is a worry that has plagued philosophy since before Aristotle up until the present day, in some form or another. But I briefly say this in reply: if we conceive of induction simply as that argumentative form in which some generalization is made or considered on the basis of some particular, then the lack of determinate logical forms (as in the deductive case) need not be evidence against the idea of a formally inductive move in general. Perhaps the simple character of both the activity of noetic apprehension and the cognitive grasp of *nous*-as-virtue will count in my favor.⁴²⁴ If induction is aimed at a simple intellectual grasp and activity, then perhaps it will not admit of the many and various logical forms that obtain in the deductive case where there are, as it were, intellectual parts. Valid deductive form expresses a relation between these parts; but where there are no parts, there can be no logical schemata. This, however, need not count against the idea that there is some generic inductive form which produces generalizations that are adequate to the particulars on which they are based.

To further respond to this worry: one way of characterizing the difficulty throughout the ages is not about the generic adequacy of an inference from a particular case to a universal generalization, since that basic move is taken for granted. Rather, the perennial project is about the material conditions on making *good* generalizations, just as, by way of analogy, Aristotle gives us material conditions on making deductions that are scientifically demonstrative. Accordingly, I do not intend to insist upon any thick notion of adequate inductive form which guarantees *success*; rather, I want to save a very thin notion of what counts as “formally inductive,” a generalization that is adequate to what one finds in a particular, which can nevertheless hang free of success and truth.⁴²⁵ I therefore ask my readers to grant me this much, at least in order to articulate an alternative view.

I have thus proposed a distinction, one which is very relevant in the deductive case but not so obvious in the inductive case, between those arguments whose content is necessarily truth-entailing and in a way that exploits certain logical relations, and those arguments whose content falls short in some way but whose constitutive logical relations remain adequate. Bearing this distinction

⁴²⁴ Cf. e.g. *de Anima* III.6 *passim*.

⁴²⁵ This is related to views and debates about generics in Aristotle and the logic, quite generally, of Aristotelian Categoricals. See, for example, Michael Thompson, *Life and Action* (2008).

in mind in our treatment of induction, some difficulties in the literature become less problematic.⁴²⁶ I am suggesting that we ought to understand induction as mere logical form when we move from a particular case to a universal generalization without qualification, so that any such generalization that is appropriate to the concrete particular under consideration will count as adequate.⁴²⁷ This helps dissolve some tension between passages in which the inductive logical form is mentioned in a generic way, insofar as it is productive of generalizations *simpliciter*, and passages in which induction produces correct universals the grasp of which constitutes some intellectual virtue. Although Aristotle does not explicitly distinguish these two aspects of induction, we can discern the difference depending on the deductive correlate in each context, whether demonstrative deductions or deductions *simpliciter*.

After all, it is natural to read *Posterior Analytics* B.19 as considering induction in this more robust sense, one correlative with demonstration, since induction in that chapter is productive of the intellectual virtue of *nous* just as demonstrations or scientific deductions (συλλογισμοὶ ἐπιστημονικοὶ) are productive (or expressive) of scientific knowledge (ἐπιστήμη). But, on this natural reading, a tension arises between this passage and those in which “induction” names a much thinner activity, an activity conceived broadly and only in formal terms, such as *Posterior Analytics* A.1.⁴²⁸ This has led some readers of B.19 to search for some further step in the process of coming to *nous-as-hexis*, since they understand induction always and everywhere in purely formal terms, as correlative with deduction. But if in B.19 “induction” not only denotes some logical form in general but can also name an argument that proceeds inductively from the appropriate and correct preexisting *gnōsis* to the appropriate and correct conclusion, then we need not look elsewhere for a further account of how we come to grasp the immediate first principles. This is because, on the view I am suggesting, there is an ambiguity in the term “induction” itself, so that in some contexts it is a

⁴²⁶ I am thinking of those who seek some further step beyond induction by which we come to grasp the principles as *principles*. Recall Kosman (1973), McKirahan (1992), Charles (2002), Bronstein (2010).

⁴²⁷ I am very open to the idea that *logoi* as such are explanatory, so that induction is not only responsible for something logically universal, but also for a reasoned account which supposes something to be the cause of something else. Perhaps these *logoi* can be incorrect, but they nevertheless speak to the causes of things. This is a difficult thesis to maintain, however, for a number of reasons, which I why I note my sympathy with the thought in passing, only to set it aside for another occasion.

⁴²⁸ Consider also *APr.* B.23 *passim*.

thin notion correlative with “deduction,” while in other contexts, and in B.19 perhaps most importantly, it is a more robust notion correlative with “demonstration.” Accordingly, on my reading, it is unsurprising when Aristotle says that induction is how we come to know the first principles, being productive of the intellectual virtue of *nous* thereby.

According to this interpretation, the final chapter of the *Posterior Analytics* can be both about how our knowledge proceeds *in general* from the particular grasped in perception to the universal grasped by intellect *and in particular* how we proceed from grasping perceptual particulars correctly in experience to knowing the immediate and universal first principles, the grasp of which constitutes the intellectual virtue of *nous*. Just as demonstrations that produce scientific knowledge (ἐπιστημονικαί) are not deductions with some additional premise or logical step, so too coming to grasp first principles (*nous-as-hexis*) is not accomplished by inductions with some additional premise or logical step. Rather, the inductions which are productive of immediate first principles are formally inductions whole and entire: they are materially, but not formally, different from other inductions. This material difference in deduction is the character of the terms and premises; the material difference in induction is that the perceptual particular is rightly and clearly conceived. We therefore do not need some further step on the road to first principles in B.19, but induction itself can produce the first principles, when we proceed from the appropriate grasp of particulars.

If this is right, then there is a dual meaning to Aristotle’s remark at the end of B.19 that “the soul is so constituted so as to be capable of this process.”⁴²⁹ On the one hand he must mean, as I have discussed in the previous chapter, that the soul must be already capable of grasping universals in general, of receptively considering universals *in* particulars and contemplating the intelligible form *in* the perceptual image.⁴³⁰ The soul must, in short, be capable of induction in the generic sense. There is no mystery here, nor is there anything to be explained. Humans are simply the sorts of things that contemplate and consider in a universal way (θεωρεῖν) those particulars that are presented in perception. To be sure, in view of this fact about human nature, Aristotle posits a receptive intellectual capacity, understood by an analogy with the perceptual capacities. But its operation in general stands in need of no peculiar explanation, and the fact that we reason universally on the basis of perceptual particulars *in general* is no mystery, since our souls are simply capable of undergoing that process.

⁴²⁹ *APo.* B.19 100a13-14 (trans. Mure).

⁴³⁰ Cf. *de An.* III.7-8 *passim*.

Accordingly, the burden of B.19 is not (or not only) to explain how human beings get *logoi* on the basis of perception in general, but more specifically to explain how human beings arrive at the *orthoí logoi*, in particular those universals the grasp of which constitutes the intellectual virtue of *nous*. For induction to be productive of *nous* (in a way analogous to those deductions that are productive of ἐπιστήμη) the starting point of induction, in this case the particular, must be correctly conceived. *Empeiria*, on my view, simply is the cognitive state in virtue of which the perceptual particular is rightly conceived in a stable and habitual way. But, as we have seen, even the acquisition of *empeiria* often presupposes an intellectual activity, such as reflectively engaging with a domain even at the level of perception. It very often presupposes an intellectual and reasoned process, an activity which must guide the development of experience itself so that, on the basis of experience, we might reason inductively to the first principles. In short, as we have seen previously, experience is often not only the *source* but the *product* of intellectual engagement. So, if I am right, more must be explained regarding this special kind of activity which contributes materially to the inductive process, guiding our perceptual engagement in inquiry, and indeed *producing* the grasp of perceptual particulars in *empeiria* from which inductions (now in the robust sense of the term) can proceed.

5.3 ACTIVE TEACHING, ACTIVE INQUIRY

5.3.1 Socratic Lessons

Given that Aristotle has Plato's *Meno* in mind at the beginning and end of the *Posterior Analytics*, perhaps our own inquiry would benefit from a brief detour to that text.⁴³¹ There, Plato's Socrates famously suggests that puzzlement (ἀπορία), a kind of intellectual paralysis, is helpful for learning because the student loses all his prejudices against the truth. Rather than being explicitly committed to falsehood, as the story goes, the puzzled student recovers a state of bare ignorance. Now, indeed, many interpreters have described the Socratic Method in precisely these terms, since the dialogues taken to belong to Plato's early period—and therefore to reflect most closely the *historical* Socrates—usually end in *aporia*.⁴³² The *Meno*, however, has been considered a “transitional dialogue” precisely

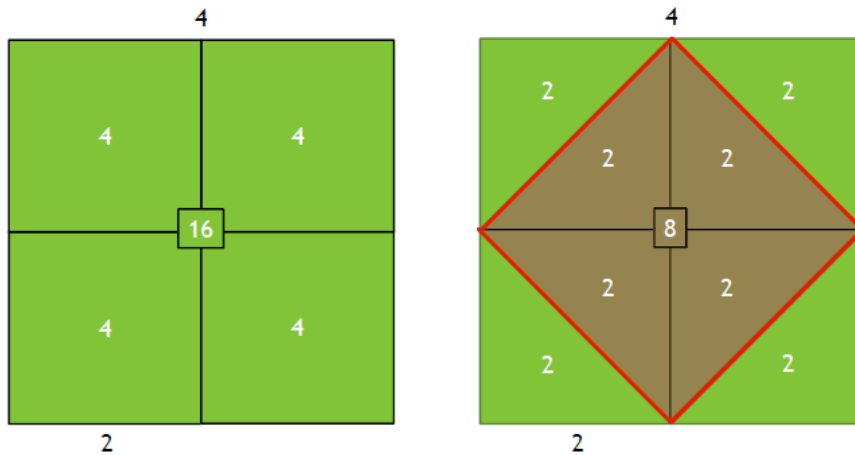
⁴³¹ The *Meno* is explicitly mentioned in the first chapter of the *APo.* (71a29). The argument of B.19 begins by treating a view similar to recollection (99b20-27), though the *Meno* is not cited explicitly.

⁴³² Cf. e.g. Gregory Vlastos, “The Socratic Elenchus” *Oxford Studies in Ancient Philosophy* (1983) 27-58.

because it emphasizes and moves beyond *aporia*.⁴³³ Most vividly in the geometry lesson, Socrates first convinces the boy that he does not, in fact, know the answer to the problem, remarking to Meno how this intellectual paralysis is both an achievement and an advantage, as we have seen.⁴³⁴

In the *Meno*, however, the discussion does not stop with *aporia*: Socrates invites Meno and us to “mark now the farther development” (84c10, trans. Jowett). Socrates proceeds by asking the boy questions about the diagram before his eyes. The boy had been familiar with geometrical figures beforehand, familiar enough to hazard a guess about how to double the area of the square. But he was insufficiently familiar with geometrical facts, or with squares in particular. The key moment in the lesson’s “further development” is when Socrates draws diagonal lines within the figure, showing that by squaring the diagonal one can double the area of any given square. Socrates teaches the boy by manipulating the geometrical diagrams, by making something available to be seen and considered which had previously been obscure for the student, who is not able to see for himself.

Figure 8. Drawing Diagonals in the *Meno*



We can abstract from the geometry lesson of the *Meno* and conclude that, according to that account at any rate, the teacher teaches by manipulating perceptual particulars and by guiding the

⁴³³ Cf. e.g. Gregory Vlastos, *Socratic Studies* (1994). Even those who do not follow Vlastos on the full developmental picture concede at least this much. Cf. e.g. Hugh Benson, “The Method of Hypothesis in the *Meno*,” *Proceedings of the Boston Area Colloquium in Ancient Philosophy* (2003) 95-143, especially in his opening line at 95: “The *Meno* has long been considered a transitional Platonic dialogue. Indeed, Gregory Vlastos once maintained that he could identify the precise point in the dialogues where the historical Socrates (interpreted by Plato) gave off and Plato (on his own) began—*Meno* 80d-e. I am less sanguine than I once was about this historical and developmental claim. But that the *Meno* marks a break with the so-called elenctic dialogues appears secure.”

⁴³⁴ Cf. *Meno* 84a3-d3.

student to focus on certain features while subordinating or even ignoring others. The student is led to see and indeed to contemplate *for himself* the relevant facts and features throughout this process: education, to continue a Platonic theme, is not like putting sight into blind eyes but rather like turning and focusing an activity the student is already engaged in. After all, we have seen that the student is already capable of intellectual consideration, of generalizing on the basis of perceptual particulars that he sees. He is therefore able to see these diagrams as instances of more general geometrical kinds, and expressive of proofs that hold quite generally for all squares.

Now, with the aid of the teacher, the student comes to be turned and pointed in the right direction, as it were: this is what Socrates does when drawing the diagonal lines. Similarly on Aristotle's account, we have seen that people draw exaggerated or over-generalized conclusions due to an insufficient familiarity with the facts. Perhaps, to return to the *Meno*, doubling the length of a line doubles the length, but this will not double the area of a square with such a line as its side. We saw similar intellectual hastiness with theories of respiration and reproduction in Aristotle: an insufficient familiarity with the facts leads to *logoi* that are exaggerated and incorrect, though perhaps reasonably generalized and induced from the deficient perceptual data available.

Some explanation is needed, then, regarding how the person comes to grasp the appropriate perceptual facts, or how the person comes to conceive of the perceptual particulars in the right way. In the natural sciences, as we have seen, this often requires an inquiry that is intellectually driven in a robust way: a biologist must be taught or must discover for himself the correct method of dissection so that the perceptual particulars can be seen aright, so that he may gain experience in this domain. A teacher can streamline this perceptual engagement, by teaching or even accomplishing for him the right method of dissection from the start, but for the student to learn he must see the internal organs for himself: only then can he grasp with his own mind the universals which are made available in the particulars clearly and rightly conceived.

Teachers of both biology and geometry, however, may expect more from their students, guiding not only their first-order learning about the circulation of blood but also their higher-order skill in inquiry. In these cases the teacher may not tell the students precisely how to dissect an animal or where to draw diagonal lines in a diagram. In such cases the teacher asks questions, raising puzzles and giving clues that constrain without completing the inquiry for the student. This is perhaps most important when training students to become researchers and inquirers in their own right: when a student must not only master some already mastered domain, but also go on to make

his own discoveries, a different set of skills must be developed in the student. A similar point may be made about teaching someone to be a teacher.

Puzzles and questions help drive inquiry forward, then, so that the logical material for induction can come to be more and more refined, and therefore ever closer to producing the *orthoi logoi* inductively. As I argued in the preceding chapter, as one's perceptual engagement in a domain becomes more refined, so do the *logoi* one forms inductively on the basis of those perceptual particulars. But perception, memory, and a capacity for forming *logoi* do not guarantee or explain the success of inquiry; rather, there must be some active or productive activity which guides and governs the student's progression toward the truth. Once the student *sees* aright, he can *think* aright—for our souls are so constituted as to reason inductively, forming *logoi* on the basis of particulars grasped in perception, but something must guide and direct this very seeing. Asking and being asked the right questions about the right features of what is available to one in perception goes some way toward explaining this process, and is certainly the focus in the Socratic context.

5.3.2 An Aristotelian Parallel

Let us now turn to a parallel passage from *Metaphysics* Θ.9 in which Aristotle considers the relationship of activity and potentiality in cases of discovery. As we have seen from the preceding discussion and in previous chapters, a teacher's instruction or favorable circumstances can streamline the process of learning, so that the more active or productive one of the necessary prior activities can be accomplished externally for the student. In cases of discovery, however, the student must accomplish all aspects of learning himself, as if in an intellectual vacuum. In these cases, as we have seen, a pressing question arises regarding the achievement of perceptual experience, that is, a complete and clear grasp of the relevant particulars in a given domain. We therefore return to the question of this chapter once again: how do we understand the gradual process whereby one's prior intellectual activity and one's perceptual deliverances become more refined, particularly if we cannot appeal to a teacher or to fortunate perceptual circumstances? This question about the difficult case of discovery has arisen for us against the background of epistemological considerations.

In *Metaphysics* Θ Aristotle's topic is, in contrast, metaphysical. In that book he considers activity (ἐνέργεια) and potentiality (δύναμις),⁴³⁵ and in the final chapters (8-10) he considers the various ways in which activity is prior to potentiality. This is perhaps obvious in the case of learning by instruction, since the teacher must possess and have contemplated the knowledge which the student comes to learn, just as the parent already possesses the substantial form that the offspring comes to share.⁴³⁶ And even the student must, as we have seen, actively contemplate (e.g.) elephants in order to learn about elephants.⁴³⁷ Aristotle considers these cases from a metaphysical perspective, insofar as they illustrate a more general point about the relationship between activity and potentiality. In chapter nine he considers the case of discovery, where no teacher is available who already possesses the knowledge to-be-learned, who can guide the student's gradual process of contemplating in order to learn. He considers this case because discovery might seem to be an exception to the general metaphysical priority of activity to potentiality. Aristotle gives us an answer that relies heavily on geometrical examples.⁴³⁸ It becomes clear as the discussion unfolds that *some* activity must precede and facilitate the process of learning even in cases of discovery:

⁴³⁵ As before, I prefer to translate *energeia* as "activity" and *entelecheia* as "actuality," "perfection," "fulfillment" or "realization." While it is true that *entelecheia* is mentioned in *Meta.* Θ, the arguments about priority and posteriority at the end of the book principally concern *energeia* and *dynamis*.

⁴³⁶ Cf. *Meta.* Θ.8 1049b19-27.

⁴³⁷ Cf. *Meta.* Θ.8 1049b27-50a2.

⁴³⁸ See *Meta.* Θ.6 1048a35-b9 for a nearby precedent for this examples-based argumentative style, a method whose inductive character is particularly relevant for our present epistemological study: "What we wish to say is clear by induction with respect to particular cases, and it is not necessary to seek a definition of each thing but even to be able to see the analogy, that it is as the one building relates to the one capable of building, and as the awake relates to the asleep, and as the one seeing relates to one with eyes shut but who has sight, and as that which has come to bear a distinctive form from the matter relates to the matter, and as that which has been brought to perfection relates to the imperfect. Let the *energeia* have been defined corresponding to the one part of each distinction, and the *dynamis* be defined corresponding to the other. For not everything is said to be in *energeia* in the same way, except by analogy, as this is in that or relates to that, or as this other is in another or relates to another: for some are as motion to potentiality while others are as being to some matter." (δῆλον δ' ἐπὶ τῶν καθ' ἕκαστα τῇ ἐπαγωγῇ ὃ βουλόμεθα λέγειν, καὶ οὐ δεῖ παντὸς ὄρον ζητεῖν ἀλλὰ καὶ τὸ ἀνάλογον συνορᾶν, ὅτι ὡς τὸ οἰκοδομοῦν πρὸς τὸ οἰκοδομικόν, καὶ τὸ ἐργηγορὸς πρὸς τὸ καθεῦδον, καὶ τὸ ὄρων πρὸς τὸ μῦνον μὲν ὄψιν δὲ ἔχον, καὶ τὸ ἀποκεκριμένον ἐκ τῆς ὕλης πρὸς τὴν ὕλην, καὶ τὸ ἀπειργασμένον πρὸς τὸ ἀνέργαστον. ταύτης δὲ τῆς διαφορᾶς θατέρω μορίῳ ἔστω ἡ ἐνέργεια ἀφωρισμένη θατέρω δὲ τὸ δυνατόν. λέγεται δὲ ἐνέργεια οὐ πάντα ὁμοίως ἀλλ' ἢ τῷ ἀνάλογον, ὡς τοῦτο ἐν τούτῳ ἢ πρὸς τοῦτο, τόδ' ἐν τῷδε ἢ πρὸς τόδε· τὰ μὲν γὰρ ὡς κινήσεις πρὸς δύναμιν τὰ δ' ὡς οὐσία πρὸς τινα ὕλην).

[a] And also diagrams are discovered by activity; for people discover by dividing. If the diagrams had already been divided, they would be clear.⁴³⁹ But as it is they are present in potentiality. [b] Why does the triangle [have angles equal to] two rights? Because the angles around a single point are equal to two rights. So if the line parallel to the side had been drawn up, the reason why would be immediately clear to one who knows. [c] Why in general is it a right [angle] inside a semi-circle? Because if the three were equal, both the two base angles and the one fixed from the middle are right, [this is] clear upon seeing it to one who knows this.⁴⁴⁰

The first thing to note about this passage is its description of two perceptual states an inquirer can be in with respect to a particular fact or feature in a given domain. Note that these states are being compared for one who has not yet discovered the feature of (e.g.) triangles. On the one hand, due to the action of a teacher or favorable circumstances (perhaps sticks being arranged *just so* by chance) the parallel line may already have been drawn, so that the geometrical fact is, as it were, already there before one's eyes. In contrast, and much more commonly when inquiring into triangles, one simply considers a triangle, perhaps situated on a baseline without any additional lines being drawn. In this latter case, we might say that the geometrical feature is already there to be discovered, but has not yet been made obvious or available to the inquirer.

⁴³⁹ “They” has no clear antecedent. One might be inclined to take τὰ διαγράμματα as the subject, though this is not idiomatic for English. Nor, however, do we speak of τὰ διαγράμματα being discovered. It is likely that Aristotle is using τὰ διαγράμματα in a more contentful way, implying perhaps “proof-demonstrating diagrams” or some such.

⁴⁴⁰ *Meta.* Θ.9 1051a21-29: εὐρίσκεται δὲ καὶ τὰ διαγράμματα ἐνεργείᾳ· διαιροῦντες γὰρ εὐρίσκουσιν. εἰ δ' ἦν διηρημένα, φανερὰ ἂν ἦν· νῦν δ' ἐνυπάρχει δυνάμει. διὰ τί δύο ὀρθαὶ τὸ τρίγωνον; ὅτι αἱ περὶ μίαν στιγμὴν γωνίαι ἴσαι δύο ὀρθαῖς. εἰ οὖν ἀνήκτο ἢ παρὰ τὴν πλευρὰν, ἰδόντι ἂν ἦν εὐθύς δῆλον. διὰ τί ἐν ἡμικυκλίῳ ὀρθὴ καθόλου. διότι ἐὰν ἴσαι τρεῖς, ἢ τε βᾶσις δύο καὶ ἢ ἐκ μέσου ἐπισταθεῖσα ὀρθή, ἰδόντι δῆλον τῷ ἐκείνῳ εἰδότη. There are disputes about parts of this text, in particular the semicircle example. For one, it is disputed whether at 51a27 it should be διὰ τί or διότι, and this decision affects where one places the punctuation. I do not wish to weigh in on these details or, in general, to make use of that example. I include it as part of the translation, but there are very serious issues to be considered that I am working on in a separate paper. For consideration of these examples, see Ross *ad loc*, Burnyeat (1984), Makin (2006), Hasper (2011).

Figure 9. Drawing Parallels with Aristotle in *Metaphysics* Θ.9



This argumentative structure bears some similarity to a passage considered in the previous chapter regarding the relationship between perception and knowledge. Recall what Aristotle claims in *Posterior Analytics* A.31:

Nor is knowing through perception. For even if the perception is of the such and not of this something, nevertheless it is necessary that one perceive, at any rate, this thing both at some place and at some time. But it is impossible to perceive the universal and what holds in all cases: for it is neither a *this* nor *now*, for that would not be universal: for we say that the *always and everywhere* is universal. Since, then, demonstrations are universal, it is not possible to perceive these, nor is knowing through perception. But it is clear that even if it were possible to perceive the triangle, that it has angles equal to two rights, we would [still] seek a demonstration, and we do not know it, as some say: for while it is necessary to perceive the particular, the knowledge is by coming to know the universal. For this reason even if, being on the moon, we were watching the earth interposing, we would not know the cause of the eclipse. For we would be perceiving that it was now eclipsing and not in general why. For perception is not of the universal. But if however, from contemplating this happening often, we had hunted down the universal, we would have a demonstration: for from many particulars the universal is clear.⁴⁴¹

⁴⁴¹ *APo.* A.31 87b28-88a5: Οὐδὲ δι' αἰσθήσεως ἔστιν ἐπίστασθαι. εἰ γὰρ καὶ ἔστιν ἡ αἴσθησις τοῦ τοιοῦδε καὶ μὴ τοῦδέ τινος, ἀλλ' αἰσθάνεσθαι γε ἀναγκαῖον τόδε τι καὶ ποῦ καὶ νῦν. τὸ δὲ καθόλου καὶ ἐπὶ πᾶσιν ἀδύνατον αἰσθάνεσθαι• οὐ γὰρ τόδε οὐδὲ νῦν• οὐ γὰρ ἂν ἦν καθόλου• τὸ γὰρ ἀεὶ καὶ πανταχοῦ καθόλου φαμέν εἶναι. ἐπεὶ οὖν αἱ μὲν ἀποδείξεις καθόλου, ταῦτα δ' οὐκ ἔστιν αἰσθάνεσθαι, φανερόν ὅτι οὐδ' ἐπίστασθαι δι' αἰσθήσεως ἔστιν ἀλλὰ δῆλον ὅτι καὶ εἰ ἦν αἰσθάνεσθαι τὸ τρίγωνον ὅτι δυσὶν ὀρθαῖς ἴσας ἔχει τὰς γωνίας, ἐζητοῦμεν ἂν ἀποδείξιν καὶ οὐχ ὥσπερ φασὶ τινες ἠπιστάμεθα• αἰσθάνεσθαι μὲν γὰρ ἀνάγκη καθ' ἕκαστον, ἢ δ' ἐπιστήμη τῶ τὸ

This passage from *Posterior Analytics* A.31 mentions the same geometrical proof that all triangles have internal angles equal to two rights, a very common example in the *Analytics* generally. It is the relationship between perceiving (αἰσθάνεσθαι), contemplating (θεωρεῖν), and hunting (θηρεύειν) that interests me in this passage. But first let us return to another closely related passage, *Posterior Analytics* B.2, in which he makes a slightly different point about the same case, moon-bound inquiry into the cause of lunar eclipses:

Cases in which the middle term is sensible may make clear that inquiry is of the middle term. For we seek not having perceived (e.g.) an eclipse, if it is or not. But if we were on the moon, we would inquire neither if it came to be nor why, but they would [both] be clear at the same time. For from perceiving it would become possible for us to know even the universal. For the perception is that [the earth] is obstructing (for it is also clear that it is now eclipsing), and from this the universal would come to be.⁴⁴²

In both of these passages from the *Posterior Analytics*, Aristotle considers a perceptual perspective from which a student can easily grasp the cause and the relevant universal as an epistemological limit case. In the first passage he says that it is by considering or contemplating something happening often (ἐκ τοῦ θεωρεῖν τοῦτο πολλάκις συμβαῖνον) and by hunting down the universal that we come to have it. But in the second passage he emphasizes that inquiry (ζήτησις), at any rate, can stop as a result of this excellent perspective: if we were on the moon, there would be no need for further hunting, for further inquiry into the cause of a lunar eclipse.⁴⁴³ If there is no

καθόλου γνωρίζειν ἐστίν. διὸ καὶ εἰ ἐπὶ τῆς σελήνης ὄντες ἐωρῶμεν ἀντιφράττουσαν τὴν γῆν, οὐκ ἂν ἤδειμεν τὴν αἰτίαν τῆς ἐκλείψεως. ἤσθανόμεθα γὰρ ἂν ὅτι νῦν ἐκλείπει, καὶ οὐ διότι ὅλως· οὐ γὰρ ἦν τοῦ καθόλου αἰσθησις. οὐ μὴν ἀλλ' ἐκ τοῦ θεωρεῖν τοῦτο πολλάκις συμβαῖνον τὸ καθόλου ἂν θηρεύσαντες ἀπόδειξιν εἶχομεν· ἐκ γὰρ τῶν καθ' ἕκαστα πλειόνων τὸ καθόλου δῆλον.

⁴⁴² *APo.* B.2 90a26-31: Ὅτι δ' ἐστὶ τοῦ μέσου ἢ ζήτησις, δηλοῖ ὅσων τὸ μέσον αἰσθητόν. ζητοῦμεν γὰρ μὴ ἤσθημένοι, οἷον τῆς ἐκλείψεως, εἰ ἔστιν ἢ μὴ. εἰ δ' ἤμεν ἐπὶ τῆς σελήνης, οὐκ ἂν ἐζητοῦμεν οὔτ' εἰ γίνεται οὔτε διὰ τί, ἀλλ' ἅμα δῆλον ἂν ἦν. ἐκ γὰρ τοῦ αἰσθέσθαι καὶ τὸ καθόλου ἐγένετο ἂν ἡμῖν εἰδέναι. ἢ μὲν γὰρ αἰσθησις ὅτι νῦν ἀντιφράττει (καὶ γὰρ δῆλον ὅτι νῦν ἐκλείπει)· ἐκ δὲ τούτου τὸ καθόλου ἂν ἐγένετο.

⁴⁴³ Interestingly, though, moon-dwellers might call such an eclipse a “solar eclipse.” Even more strangely, what we call a “solar eclipse,” and the phenomenon whose cause is obvious to us, moon-dwellers might call a “terrestrial eclipse.” When occupying the eclipsed body, the cause will be obvious; when occupying the eclipsing body, the cause will require some uncovering.

need for further hunting in this case, does seeing alone suffice for knowledge? Given that he argues in the first passage that knowledge is not through perception, we ought to conclude that *theōrein* means something more intellectual here: even with a maximally privileged perceptual perspective in which no further inquiry is required, Aristotle here denies that knowledge is *through* perception (δι' αἰσθήσεως). Therefore one must still *contemplate* the occurrence happening often in order to grasp the universal and, through it, the demonstration. Accordingly, I have urged in the preceding chapter that even from this privileged perspective prior intellectual activity of this receptive and quasi-passive sort is still required in every case: it is not (or not only) by *seeing* this happening often but rather (or also) by *contemplating* (θεωρεῖν) it happening often that one comes to grasp the universal in a stable way (ἔχειν).⁴⁴⁴

The privileged perspective of being on the moon (with respect to discovering the cause of a lunar eclipse) is similar to a geometrical diagram of a triangle with a parallel line already having been drawn (with respect to discovering the cause of triangles having internal angles equal to two rights). Aristotle says that if the parallel line is drawn, the proof is clear to one who knows the relevant background facts (e.g. standard theorems about the equality of angles relative to parallel lines). Aristotle might have made a similar qualification in the case of the lunar eclipse: the cause and universal is clear to one already possessing sufficient grasp of certain background facts (e.g. what shadows are in general). When the parallel is already drawn for the student, perhaps by his teacher, the case is analogous to being on the moon: inquiry can stop, but only when some background knowledge is presupposed, and even then some receptive and contemplative intellectual activity remains necessary.

These passages are also parallel with the geometry lesson in the *Meno*. Certain background facts are presupposed, but the student cannot yet see how to construct a square with double the

⁴⁴⁴ “Often” (πολλάκις) could modify “from contemplating this” (ἐκ τοῦ θεωρεῖν τοῦτο) or “this happening” (τοῦτο ... συμβαῖνον). On either reading we have trouble with the intuitive idea that, from these privileged perspectives, we may not need to consider something happening multiple times, but perhaps once alone is sufficient. In reply to the worry against the first way of reading the line, perhaps from such a privileged perspective one may engage in correct intellectual activity, but not yet grasp the *hexis*. In reply to the worry when we take the line in the second way, perhaps one cannot be sure that this is the cause if one does not see it happening in just this way multiple times. I favor the first reading in view of the interpretive work of the preceding chapters: perhaps one can engage in virtuous and correct intellectual activity from such a privileged perceptual perspective, but one may not yet possess the stable and developed intellectual *hexis* without doing this contemplating several times.

area. Once Socrates draws the diagonal lines and draws the boy's attention to them, he is able to see for himself, and inquiry is able to stop. The "further development" is accomplished not only by Socrates asking questions, an activity he himself admits, but also by Socrates' sharing the inquiry with him. By drawing the diagonal lines, Socrates invites the student into the inquiry, drawing out a feature and drawing explicit attention to it by his questions. Socrates' purpose here is shared by Aristotle: the student must be led to see and grasp certain features for himself, which features the teacher helps make available to the student. Teaching is not like putting sight into blind eyes, but rather a facilitating—that is, a making easier—so that the student's own inquiry is streamlined, focused, and rendered maximally efficient.

Now, in the case of the lunar eclipse, Aristotle leaves unexplained how one might come to occupy such a privileged perspective as being on the moon. Indeed, such a perspective might even have been, by his lights, impossible to occupy, given his other views about heavenly bodies and the superlunary realm. His purpose in using that example in the *Posterior Analytics* was to insist (i) that a certain intellectual activity is necessary even in straightforward cases of learning when the perceptual particular is already clear (as in A.31) or (ii) that in straightforward perceptual cases inquiry, at any rate, is not necessary since no further hunting down is required (as in B.2). Though the same example serves different argumentative purposes in these two passages, in both cases Aristotle considers a limit case in which the perceptual data, as it were, are maximally revealing. Inquiry and intellectual hunting is therefore a distinct activity from this other more receptive or contemplative intellectual activity: while the former can be minimized to a vanishing point in these limit cases, the latter remains necessary even then.

But because he has considered these limit cases where inquiry is minimized, in those passages Aristotle has said little about how we should understand cases that are not as straightforward, where the perceptual data are obscure or unclear. For the straightforward limit cases, Aristotle could simply presume the activity of a teacher or favorable circumstance, someone or something which can put the student into a position to contemplate in order to learn. But how ought we to understand *inquiry* into triangles, as when our diagrams have not already been perforated, as it were, by a teacher (or by favorable circumstances)? Alternatively, how ought we to understand inquiry into the cause of a lunar eclipse for those of us bound to conduct our inquiry from the surface of the Earth?

5.3.3 Coming to Know by Making

Having seen the parallels between important passages from the *Posterior Analytics*, the *Meno*, and *Metaphysics* Θ.9, let us return with a special focus on the latter passage. Recall that the case of discovery presents a distinctive problem for Aristotle's metaphysics of act and potency: since there is no teacher in the case of discovery, the merely potential knower may seem to bootstrap his way into actual knowledge in an illicit way. Accordingly, this may seem to be a counterexample to the general priority of *energeia* to *dynamis* Aristotle defended in the previous chapter of the *Metaphysics*, Θ.8. Indeed, this distinctive feature of discovery is precisely why the case is so interesting for our own purposes and for our peculiar *epistemological* inquiry: not only must the student be intellectually and perceptually *receptive*, as we have seen above, but when he learns by discovery he must also be *active* in uncovering what is available for him to receive. When the student cannot count on a teacher to draw out the relevant features for him, perhaps in some geometrical diagram, the student must himself uncover and hunt down what is available for him to discover in perception. This is, I take it, what Aristotle means by "inquiry" (ζήτησις).

Although so far this may seem to be abstract, the distinction between these two activities is consistent with ordinary ways of thinking about learning. In geometry classes we can distinguish between students learning particular proofs (e.g. that all triangles have internal angles equal to two rights, or that one can double the area of a square by using the length of its diagonal) and students learning general strategies to manipulate diagrams and discover new proofs for themselves. As students learn particular proofs of a certain style, they become adept at deploying certain general geometrical strategies to solve problems and construct proofs they have not yet seen before. For example: "what happens if I draw a parallel line here?" or perhaps, "will bisecting this angle reveal anything about this diagram that will aid in constructing a proof?" Often these thoughts happen in an imperceptible time, so that they are never articulated in this way. Nevertheless, something like this inner dialogue can be presupposed when the student manipulates and uncovers more of what is perceptually and indeed intellectually available in the diagram: he comes to see more and is therefore able to intellectually consider more about a given geometrical problem. Similarly, even when the perspective is merely imaginary, it may aid one's thinking about a difficult case. "What would the

lunar eclipse look like, I wonder, if I were on the moon's surface?"⁴⁴⁵ In all these cases, one is actively engaged with what is perceptually available, working to uncover what is, in a sense, already there to be grasped, but now in a deeper and more universal way.

These activities are productive in a certain way, since they uncover something that is (in some sense) already there in perception, drawing it out for more explicit intellectual consideration. One of the presuppositions of this chapter has been that humans perform induction without qualification (and, in general, receptive intellectual activity) by our very nature, so that it is no mystery how we come to contemplate a universal intelligible form on the basis of a perceptual particular. For Aristotle, at any rate, the mystery, as it were, has rather been to explain how we come to contemplate the *correct* universal—the *orthos logos*—on the basis of a perceptual particular rightly conceived. We can take inductive activity for granted, there is no mystery how humans come to trade in universals, we are just the sorts of things that can and do consider particulars in a universal way. But as with all logical forms of argument, if we put garbage in, we will get garbage out the other end, as the saying goes. One admittedly rough way to put the question, then, is: how can we work toward good inputs on the particular side of the inductive equation?

We have found an answer to this question, or a preliminary one at any rate. While the receptive intellectual activity generalizes without qualification on the basis of perceptual particulars in general, this more productive intellectual activity works on what is perceptually available *to be generalized*. It is productive insofar as it makes things to be intellectually available for one's own consideration. We might even call its contribution *constructive*, insofar as it constructs perspectives or auxiliary structures to aid in the consideration of a particular case, at least in the examples we have entertained. Indeed, on this reading, the features were already there in perception, in some sense, to be contemplated and considered in a universal way, but this constructive or productive intellectual activity draws them out so that they can be considered more easily, more explicitly, and even more correctly. The receptive activity, therefore, more closely resembles what we think of as "ordinary thinking," especially given Aristotle's analogy between perception and intellection; this productive intellectual activity, in contrast, is different in kind. So, for example, the drawn parallel line is a production, but not in the sense that it constructs a new triangle or new features of the original

⁴⁴⁵ Or to use a constructed case that was deployed against Aristotle's own substantive views: "Two items of the same weight falling from the same height will fall at the same rate. But what if we imagine one whose weight is divided into two parts attached by a string, while leaving the other undivided?"

triangle out of whole cloth: new intelligible objects are not being produced. Rather, this intellectual production reveals something about the triangle which was already present as a perceptible and intelligible object, principally by activating what was already potentially present in the diagram, distinguishing and bringing to light something which was present but not yet presently available for thinking.

Now, I have been using suggestive language, especially in the immediately preceding paragraph, such as “productive activity” and “bringing to light” to describe the latter intellectual activity. That activity is opposed to the merely receptive character of what we might call “ordinary” human thinking. If I am right, in our passage from $\Theta.9$ Aristotle gives explicit examples of the kind of intellectual activity we have been seeking since the second chapter of this dissertation. One intellectual activity is receptive like our perceptual capacities, while the other is productive or active like light, revealing to oneself what is, in a sense, already there to be grasped. It seems intuitive to describe the two activities in these ways, though one may worry that this is merely an artifact of how I am presenting the examples Aristotle gives. Thankfully, however, there is a more important reason to describe this latter activity as productive: that is how Aristotle himself goes on to describe it in that very passage. Following the two geometrical examples in $\Theta.9$, he concludes his argument in more abstract, but also more revealing, terms:

So it is clear that the things, being in potential, are discovered by being led into activity (τὰ δυνάμει ὄντα εἰς ἐνέργειαν ἀγόμενα), and the reason is that intellection (νόησις) is an activity. So that potentiality is from activity, and because of this people come to know by making (ποιοῦντες γινώσκουσιν) (for activity according to number is posterior in coming to be).⁴⁴⁶

So, Aristotle himself adopts this suggestive language in describing the activity involved in drawing a parallel line so that one can discover the proof.

To elaborate further, let us consider the three ways that Aristotle describes the activity of parallel-drawing in this passage. He says that it is both (i) a leading what is potential to activity (τὰ δυνάμει ὄντα εἰς ἐνέργειαν ἀγόμενα) and (ii) an intellectual activity (νόησις). Furthermore, while not calling the activity itself a production (ποίησις) outright, (iii) he nevertheless refers to those who

⁴⁴⁶ *Meta.* $\Theta.9$ 1051a29-33: ὥστε φανερόν ὅτι τὰ δυνάμει ὄντα εἰς ἐνέργειαν ἀγόμενα εὐρίσκεται· αἴτιον δὲ ὅτι ἡ νόησις ἐνέργεια· ὥστ’ ἐξ ἐνεργείας ἡ δύναμις, καὶ διὰ τοῦτο ποιοῦντες γινώσκουσιν (ὑστερον γὰρ γενέσει ἡ ἐνέργεια ἢ κατ’ ἀριθμόν).

perform the activity with the participle of the related verb (ποιούντες). In this passage, we have found a clear convergence of the three traits of the active intellect with which we were left at the close of the second chapter. There we sought a more concrete account of a second intellectual activity (νόησις) which is productive or active (ποιητικός) rather than receptive (δεκτικός). There we arrived at a functional description informed by Aristotle's Light Analogy, so that its distinctive function is to activate potentially intelligible objects, like light which makes potential colors to be colors in activity (ποιεί τὰ δύνامي ὄντα χρώματα ἐνεργεία χρώματα). Here in Θ.9 Aristotle gives us two concrete geometrical examples of this very sort of intellectual activity as playing a distinctive role in inquiry and discovery.

We have located the active intellect's distinctive activity within Aristotle's wider philosophy. Though it is not widely recognized, we have in *Metaphysics* Θ.9 a clear parallel with the discussion of active intellect in *de Anima* III.5.⁴⁴⁷ In the light of this passage, then, much of the story I have been telling about two sorts of prior intellectual activity, one receptive and the other active or productive, is confirmed in quite explicit terms. While discovery is a difficult case to explain on my epistemological account, it is also somewhat difficult for Aristotle's own metaphysical picture, at any rate, earning it special consideration as a kind of appendix to the arguments of Θ.8. But it is precisely because of the distinctive difficulty the case of discovery presents that Aristotle's treatment of it is so revealing. This passage does two things for my account, in short: it gives a concrete example of the kind of productive prior activity I have been gesturing at, and it shows Aristotle describing this activity in precisely those terms we should expect given my analysis of *de Anima* III.5.

5.3.4 Making Intelligibility

So far, however, we have only these two geometrical examples that plausibly exhibit the distinctive activity of the active intellect. The argument has therefore come a long way in answering the question from the second chapter: what precise activity does “activating potentially intelligible objects” describe? It would be even better if Aristotle had given a more general description of this

⁴⁴⁷ There is much more to be said about the *metaphysical* upshot of the argument in the latter half of *Meta.* Θ.9. It is sufficient for my present purposes that the examples describe a part of active inquiry, whereby we make *perceptual* progress in a domain toward grasping and contemplating the correct universals. That Aristotle uses the same descriptions here as in *de An.* III.5 is sufficient for the present *epistemological* inquiry. I do, however, have a draft of a paper which focuses on the argument as it relates to the priority of *energeia* to *dynamis* discussed in Θ.8.

peculiar intellectual activity, both in the context of *de Anima* III.5 and *Metaphysics* Θ.9, especially if it plays such a central role in his account of learning, inquiry, and discovery. With these more concrete examples and descriptions in hand, however, a passage on philosophical method comes into view, but now with renewed significance. In this passage, also from the *Metaphysics*, we find a general description of learning and the method of inquiry:

For the proper task before us is to proceed to what is more knowable. For learning thus comes to be in all cases, through what is less knowable by nature to what is more knowable by nature. And this is the proper task: just as in [the case of] actions, from the things that are good to each person, [the task is] to make (τὸ ποιῆσαι) the things that are good in general to be good for each person, in this way from the things that are more knowable to oneself [the task is] to make the things that are knowable by nature to be knowable to oneself. But what is known and primary to each person is often known slightly, and it has little or nothing of what really is. But nevertheless from things that are knowable in a limited way, but knowable to oneself, one must attempt to know the things that are knowable in general, proceeding, as we said, through these very things.⁴⁴⁸

Aristotle here gives the familiar maxim that we proceed from what is knowable to us to what is knowable without qualification. This fits in with passages discussed in previous chapters, most notably *Posterior Analytics* B.19 and *Physics* I.1.⁴⁴⁹

What is distinctive about this passage, however, is the idea that one *makes* what is knowable by nature to be knowable to oneself. The moral case is supposed to illuminate this, where one makes what is good without qualification *to be* good for oneself. Not only do we proceed from what is less good or knowable by nature to what is more good or knowable by nature, but this very process is a kind of conformation: I *make* the good and knowable by nature—the objective good—to be good

⁴⁴⁸ *Meta.* Z.3(4) 1029b3-12: πρὸ ἔργου γὰρ τὸ μεταβαίνειν εἰς τὸ γνωριμώτερον. ἢ γὰρ μάθησις οὕτω γίνεται πᾶσι διὰ τῶν ἥττον γνωρίμων φύσει εἰς τὰ γνώριμα μᾶλλον· καὶ τοῦτο ἔργον ἐστίν, ὥσπερ ἐν ταῖς πράξεσι τὸ ποιῆσαι ἐκ τῶν ἐκάστω ἀγαθῶν τὰ ὅλως ἀγαθὰ ἐκάστω ἀγαθὰ, οὕτως ἐκ τῶν αὐτῶ γνωριμωτέρων τὰ τῆ φύσει γνώριμα αὐτῶ γνώριμα. τὰ δ' ἐκάστοις γνώριμα καὶ πρῶτα πολλάκις ἡρέμα ἐστὶ γνώριμα, καὶ μικρὸν ἢ οὐθὲν ἔχει τοῦ ὄντος· ἀλλ' ὁμως ἐκ τῶν φαύλως μὲν γνωστῶν αὐτῶ δὲ γνωστῶν τὰ ὅλως γνωστὰ γῶναι πειρατέον, μεταβαίνοντας, ὥσπερ εἴρηται, διὰ τούτων αὐτῶν.

⁴⁴⁹ For the same methodology in the moral case, see also *EN* I.41095a31-b14, complete with a favorable mention of Plato. I quoted this passage at the very beginning of this dissertation.

and knowable *for me*, conforming myself to the way things really are in each case. We ourselves therefore proceed from what is less knowable according to nature to what is more knowable by nature. This passage might have struck us as simply a restatement of that otherwise familiar thought, but in view of the examples and discussion from *Metaphysics* Θ.9 it is possible to see something hitherto unrecognized: the use of the verb *to make* (τὸ ποιῆσαι) is not simply “render” but denotes a genuinely active or productive activity. There is a productive element in learning and inquiry which drives this process from what is less knowable by nature to what is more knowable. In addition to highlighting this productive element, Z.3 makes clear that this process is a matter of conformation: what is knowable by nature is already and ever will be knowable by nature and therefore does not need to be produced, while what is knowable to oneself is in a kind of flux. The change in learning, therefore, is a matter of conforming oneself to the world, either to what is good or to what is knowable by nature, so that the naturally knowable and good comes to be knowable and good *for oneself*. What is more, this passage makes clear how two different prior intellectual activities relate to the preexisting *gnōsis*: one prior intellectual activity operates at the level of perception, producing ever more subtle perceptual *gnōseis* on the basis of preceding ones, while the other intellectual activity reflects upon these new perceptual *gnōseis*, receiving and considering universal *logoi* issuing inductively from them. What we have learned in this passage, then, is that the task in moral and philosophical education is to *make* this process happen, proceeding from things less knowable by nature to things more knowable by nature.

So far, this dovetails nicely with the interpretation of the analogy with light that I have been urging since the second chapter, according to which light does not cause or create colored objects *per se*, but rather reveals them as they already are for a given sighted animal.⁴⁵⁰ Similarly, the activity of the active intellect, understood on the description above, does not cause or create intelligible objects *per se*, but rather reveals them as they already are for a given rational animal. The active intellect activates the native and natural intelligibility of some object, so that it comes to be intelligible for a given rational subject. As a reading of Z.3 this point would have been too abstract and perhaps even incredible, however, had it not been for the concrete examples from Θ.9, which help to illustrate the nature of this intellectually productive illumination. Aristotle, on the account I

⁴⁵⁰ Recall that this description of the action of light does not strictly conform to Aristotle’s settled views about light as given, for example, in *de Anima* II.7. Rather, this metaphorical description of light’s activity is drawn from the Light Analogy of III.5, describing how light acts *in a way* (τρόπον ... τινα).

have been urging, does not have in mind some kind of mysterious intuition, mystical light, or divine inspiration,⁴⁵¹ but rather something quite ordinary and familiar. For, as I have argued, it is reasonable to say that geometry students learn two different things and deploy two different kinds of skill when solving geometry problems. And, after all, teachers are in the habit of calling students “creative” who are able to come up with their own solutions to problems that they had never seen before: this kind of creativity is perhaps distinct from the kind of creativity operative, say, in creative writing.⁴⁵² It is the creativity involved in exploring and inquiring within a domain, the ordered progression from what is less intelligible by nature to what is more intelligible, as our intellects come to be conformed to intelligible objects as they are in nature, as it were, out there.

5.3.5 Two Intellects, Two Kinds of Intellectual Virtue

This dissertation began by asking about the two intellects that Aristotle posits at the beginning of *de Anima* III.5. So far I have distinguished two distinct intellectual activities attributable to two distinct intellects, one receptive and the other active or productive. If I am right, it follows that each kind of intellect should have its own kind of virtue. After all, according to my own argument in this dissertation, virtues are excellent *hexeis* of capacities or powers, according to which each performs its distinctive activity reliably and well. I shall argue that yes, indeed, Aristotle recognizes two different kinds of virtue on this count, and we get some indication of this distinction in two places in particular.

⁴⁵¹ At least not necessarily. For a complication, see *EE* VIII.2, and the section on divine intellect below.

⁴⁵² Though perhaps these notions of “production” and “creation” are closer to the central meaning than we might have originally thought, at least for Aristotle. At first glance, one might have thought that production and creation (ποίησις) most centrally denote making something *simpliciter* rather than making something’s nature to be available to someone. That is, we may be initially tempted to understand the central meaning of “production” as analogous to making things to be colored *per se*, and not revealing the color of things as they already are to some perceptual subject. Let us consider things differently, however: what if the central meaning of production in the *poetic* sense should not be generation but rather *revelation*, in the benign sense of making something available to one’s grasp. Perhaps by considering Aristotle’s theory of tragic poetry in particular, in view of the more general account of learning, we might gain some further insight to the full import of Aristotle’s notion of intellectual poetry (i.e. this νόησις--ποίησις). The work of the poet, the teacher, and the scientific investigator might all be similarly productive or creative, in that all of them seek to produce the most helpful perceptual particulars from which some universal truth can be grasped. I leave this for a future inquiry.

Before turning to these passages, however, I shall outline what we might expect these two kinds of intellectual virtue to be. The receptive intellect, whose activity is analogous to the activity of perception in important respects, should have its own receptive virtues. These virtues, as we have seen, are like forms or universals held in the soul, so that one can call up and contemplate these intelligible forms at will. The distinctive virtues of the receptive intellect are therefore directed toward receptive or contemplative activity of some sort. We might expect these activities to differ according to their function or object.

For example, if what one is contemplating or considering admits of being otherwise and is something to be produced, we might take that particular virtue to be technical or artificial, belonging to the genus of art or craft (τέχνη). There may be a virtue of housebuilding which is the form of the house in the receptive intellect, for example.⁴⁵³ If the subject matter admits of being otherwise and is rather a practical matter, we might take the receptive-intellectual virtue in question to be prudence or practical wisdom (φρόνησις). Even in these cases, which are far less clear than the theoretical virtues (νοῦς, ἐπιστήμη, σοφία), it is apparent that the intellectual activity in question is a universal consideration, though to be sure, this takes on a different shape in each case. So, on my reading, we should take the five virtues (or genera of virtue) given in *Nicomachean Ethics* VI.3 to be exhaustive of the intellectual virtues that the receptive intellect can have, whose activity is a contemplation or consideration of some form or another. This intellect, then, might be called “theoretical” or “speculative” in a generic sense even broader than the theoretical and speculative virtues, given that even practical and productive intellectual virtues are also directed at a kind of contemplation broadly analogous with the receptivity of sense perception.⁴⁵⁴ Insofar as they are directed at action and

⁴⁵³ Cf. *Meta.* Z.7, esp. 1032a25-b14.

⁴⁵⁴ It is important to my reading, though I do not defend the idea here, that Aristotle uses θεωρεῖν throughout his discussion in *EN* VI, in particular when dividing up the subject matters of each of the virtues. I have bolded the key line here, 1139a1-17: *περὶ μὲν οὖν τῶν ἠθικῶν διεληλύθαμεν, περὶ δὲ τῶν λοιπῶν, περὶ ψυχῆς πρῶτον εἰπόντες, λέγωμεν οὕτως. πρότερον μὲν οὖν ἐλέχθη δὴ εἶναι μέρη τῆς ψυχῆς, τό τε λόγον ἔχον καὶ τὸ ἄλογον· νῦν δὲ περὶ τοῦ λόγον ἔχοντος τὸν αὐτὸν τρόπον διαιρετέον. καὶ ὑποκείσθω δύο τὰ λόγον ἔχοντα, ἐν μὲν ᾧ θεωροῦμεν τὰ τοιαῦτα τῶν ὄντων ὅσων αἱ ἀρχαὶ μὴ ἐνδέχονται ἄλλως ἔχειν, ἐν δὲ ᾧ τὰ ἐνδεχόμενα· πρὸς γὰρ τὰ τῷ γένει ἕτερα καὶ τῶν τῆς ψυχῆς μορίων ἕτερον τῷ γένει τὸ πρὸς ἐκάτερον πεφυκός, εἴπερ καθ’ ὁμοιότητά τινα καὶ οἰκειότητα ἢ γνῶσις ὑπάρχει αὐτοῖς. λεγέσθω δὲ τούτων τὸ μὲν ἐπιστημονικὸν τὸ δὲ λογιστικόν· τὸ γὰρ βουλευέσθαι καὶ λογίζεσθαι ταυτόν, οὐδεὶς δὲ βουλεύεται περὶ τῶν μὴ ἐνδεχομένων ἄλλως ἔχειν. ὥστε τὸ λογιστικόν ἐστὶν ἐν τι μέρος τοῦ*

production, they are not *theoretical*, but they nevertheless involve some *receptive* consideration of some universal form, though indeed under a different modality than the theoretical virtues and activities.⁴⁵⁵

Interestingly, we see the same five virtues (or genera of virtue) in *Posterior Analytics* A.33. Part of my contention has been that that treatise addresses intellectual or dianoetic learning in general, so that the first principle found in the opening lines that insists on preexisting *gnōsis* gives the specific difference in cases of dianoetic learning, distinguishing it from cases of mere habituation. Even though the focus of the treatise seems to be demonstrative knowledge (ἐπιστήμη) and, to a lesser degree, the grasp of its first principles (νοῦς), at the end of the first book he nevertheless lists all five of the virtues named in the shared book from the ethical treatises considered above.

But how one ought to distribute the others both into thought, and into *nous-as-hexis*, scientific knowledge, art, prudence, and wisdom, belongs rather, in some ways, to natural philosophical speculation, and in other ways, to ethical speculation.⁴⁵⁶

Although Aristotle names these classes of virtue to set them aside, this nevertheless indicates that at least some part of the principles he has laid out in the preceding book of the *Analytics* would apply to things that might, in the ethical or physical treatises, be distributed to these other classes of virtue.

What is interesting for our purposes, however, is simply that he makes mention of these other intellectual states under a single heading both here and in the other ethical and physical contexts: all are excellent *dianoetic* states.⁴⁵⁷ Let us recall that the *nous* of *de Anima* III.4—what I have been calling receptive or potential intellect, the one which is nothing in activity until it thinks—is said to be “that in virtue of which the soul thinks (διανοεῖται) and supposes (ὑπολαμβάνει).”⁴⁵⁸

λόγον ἔχοντος. ληπτέον ἄρ' ἑκατέρου τούτων τίς ἢ βελτίστη ἔξις· αὕτη γὰρ ἀρετὴ ἑκατέρου, ἢ δ' ἀρετὴ πρὸς τὸ ἔργον τὸ οἰκεῖον.

⁴⁵⁵ See also *EN* VI.4 1140a10-14.

⁴⁵⁶ *APo.* A.33 89b7-9: Τὰ δὲ λοιπὰ πῶς δεῖ διανεῖμαι ἐπὶ τε διανοίας καὶ νοῦ καὶ ἐπιστήμης καὶ τέχνης καὶ φρονήσεως καὶ σοφίας, τὰ μὲν φυσικῆς τὰ δὲ ἠθικῆς θεωρίας μᾶλλον ἔστιν. I want to suggest that the τε... καὶ... καὶ... καὶ... καὶ... καὶ is something like the exegetical καὶ. On my reading, the first item is the genus term and the following five are species, the five dianoetic virtues.

⁴⁵⁷ Given the placement of τε I take the five virtues listed to be a further explication of διανοίας, rather than διανοίας being just another member in the list. As further evidence for this, see the use of “dianoetic” in the first lines of *APo.* A.1, as well as the use of *dianoia* in *Phys.* VII.3 247b1-7 and of both terms in *EN* VI.1-3 *passim*, the latter two being the two passages to which (presumably) Aristotle is pointing here in the *APo.*

⁴⁵⁸ *De An.* III.4 429a22-24: ὁ ἄρα καλούμενος τῆς ψυχῆς νοῦς (λέγω δὲ νοῦν ᾧ διανοεῖται καὶ ὑπολαμβάνει ἢ ψυχὴ οὐθέν) ἔστιν ἐνεργεῖα τῶν ὄντων πρὶν νοεῖν.

Aristotle is there specifying the intellect he's speaking about: the one which is potentially all things and receptive, being nothing until it thinks, is that *nous* in virtue of which we *dianooumen*.⁴⁵⁹

This is significant because after having described this receptive intellect in *de Anima* III.4, in the following chapter Aristotle posits another intellect which is presumably not that in virtue of which we *dianooumen*. That much is familiar concerning these two distinct intellectual capacities. Similarly, on my view, Aristotle considers in broad terms the virtues of this receptive intellect in *Posterior Analytics* A.33. What is interesting about the treatment of intellectual virtue in this context, however, is that Aristotle goes on in the following chapter, in A.34, to consider a different sort of intellectual excellence, what is usually translated “quick wit.” He writes:

Quick wit is a certain skill in lighting upon the middle term in a negligible amount of time, such as if someone upon seeing that the moon always has the bright side toward the sun, quickly conceives the reason why this is, because it is bright from the sun [...]. For in every case the one seeing the extremes recognizes the middle terms, the causes. A is “the bright side being the one toward the sun from which [it is bright],” B is “to be bright from the sun,” C is “the moon.” Then B, “to be bright from the sun,” holds of C, “the moon,” and A, “the bright side being toward that from which it is bright.”⁴⁶⁰

This passage is quite interesting for our purposes, since the skill involved here seems to be a skill of the productive sort, of quickly noticing which features are salient and which are not in perception. This quick wit is something other than the knowledge of astronomy: it much more resembles the quickness involved in drawing the right auxiliary lines in a geometrical diagram. If I am right, Aristotle is here in A.34 giving us a virtue—and perhaps the *chief* virtue—of the active intellect, having just considered the several virtues and states of the receptive intellect in A.33.

⁴⁵⁹ Even the remark about *hypolambanein* serves as some confirmation, since opinion and supposition are also named as dianoetic states in *Posterior Analytics* A.31, *Physics* VII.3, and *Nicomachean Ethics* VI.3, though not *virtuous* ones.

⁴⁶⁰ *APo.* A.34 89b10-20; I leave out two other examples in the translation, but include them in the Greek here: Ἡ δ' ἀγχίνοιά ἐστιν εὐστοχία τις ἐν ἀσκέπτῳ χρόνῳ τοῦ μέσου, οἷον εἴ τις ἰδὼν ὅτι ἡ σελήνη τὸ λαμπρὸν αἰεὶ ἔχει πρὸς τὸν ἥλιον, ταχὺ ἐνενόησε διὰ τί τοῦτο, ὅτι διὰ τὸ λάμπειν ἀπὸ τοῦ ἡλίου· ἢ διαλεγόμενον πλουσίῳ ἔγνω διότι δανείζεται· ἢ διότι φίλοι, ὅτι ἐχθροὶ τοῦ αὐτοῦ. πάντα γὰρ τὰ αἴτια τὰ μέσα [ὁ] ἰδὼν τὰ ἄκρα ἐγνώρισεν. τὸ λαμπρὸν εἶναι τὸ πρὸς τὸν ἥλιον ἐφ' οὗ A, τὸ λάμπειν ἀπὸ τοῦ ἡλίου B, σελήνη τὸ Γ. ὑπάρχει δὴ τῆ μὲν σελήνη τῷ Γ τὸ B, τὸ λάμπειν ἀπὸ τοῦ ἡλίου· τῷ δὲ B τὸ A, τὸ πρὸς τοῦτ' εἶναι τὸ λαμπρὸν, ἀφ' οὗ λάμπει· ὥστε καὶ τῷ Γ τὸ A διὰ τοῦ B.

I might make a similarly brief suggestion regarding two cognitive *hexeis* that Aristotle mentions in the opening lines of the *Parts of Animals*:

Concerning every consideration and every method, both the more lowly and the more honorable alike, there seem to be two kinds of *hexeis*, of which one can be well named “scientific knowledge” of the subject matter, and another a certain sort of educated state. For it belongs to one who has been educated in this way to be able to discern by hitting the mark about what someone has said correctly and not. For indeed we suppose such a person to have been educated in general, and to have been educated is to be able to do what has been said. Except this person, on the one hand, we suppose to be (as it were) discriminating in all cases, being but numerically one person, while we suppose the other one to be discriminating concerning some defined nature. For someone else may be disposed concerning a part in the same way as we have described.⁴⁶¹

In this passage Aristotle outlines two *hexeis* involved with *theōria*, one which we might call scientific knowledge belonging to the “ordinary” faculty of thinking, and the other which is a more general education according to which one can make judgments about what is rightly or wrongly said, presumably by someone more expert in a given domain.⁴⁶² Here it is clear that there is a kind of capacity for judgment which is generic unlike scientific knowledge properly so-called, which is nevertheless a kind of excellent cognitive or theoretical *hexis*. I note that both here and in *Posterior Analytics* A.34, Aristotle describes the non-standard virtue as skill in hitting the mark (εὐστόχως or

⁴⁶¹ *PA* I.1 639a1-11: Περὶ πᾶσαν θεωρίαν τε καὶ μέθοδον, ὁμοίως ταπεινοτέραν τε καὶ τιμιωτέραν, δύο φαίνονται τρόποι τῆς ἕξεως εἶναι, ὧν τὴν μὲν ἐπιστήμην τοῦ πράγματος καλῶς ἔχει προσαγορεύειν, τὴν δ' οἷον παιδείαν τινά. Παιδευμένου γὰρ ἐστὶ κατὰ τρόπον τὸ δύνασθαι κρῖναι εὐστόχως τί καλῶς ἢ μὴ καλῶς ἀποδίδωσιν ὁ λέγων. Τοιοῦτον γὰρ δὴ τίνα καὶ τὸν ὅλως πεπαιδευμένον οἴομεθ' εἶναι, καὶ τὸ πεπαιδεῦσθαι τὸ δύνασθαι ποιεῖν τὸ εἰρημένον. Πλήν τοῦτον μὲν περὶ πάντων ὡς εἰπεῖν κριτικόν τίνα νομίζομεν εἶναι ἓνα τὸν ἀριθμὸν ὄντα, τὸν δὲ περὶ τινος φύσεως ἀφωρισμένης· εἴη γὰρ ἂν τις ἕτερος τὸν αὐτὸν τρόπον τῷ εἰρημένῳ διακείμενος περὶ μόνιον.

⁴⁶² For a more thorough discussion of the importance of this passage to natural philosophical inquiry in Aristotle, see James Lennox “Experience, Expertise and Induction” (unpublished manuscript, 2016).

εὐστοχία), further suggesting that these two passages are describing a cognitive state of a similar sort.⁴⁶³

While there is much more to be investigated with respect to these issues, I mention the preceding passages simply to point out that there may already have been a distinction available between two kinds of intellectual virtues, mentioned in the natural philosophical works (e.g. *Parts of Animals* I.1), in the ethical works (e.g. *Nicomachean Ethics* VI.9-11) and the logical works (e.g. *Posterior Analytics* A.33-34). This distinction between two broad categories of intellectual virtues, as I have suggested, corresponds to the distinction between two intellects from the *de Anima*, the latter distinction being one which interpreters to date have found much more pressing. An advantage of my conception of the active intellect is that I can point to a place in Aristotle's psychology that posits a capacity corresponding to these different sorts of intellectual *hexeis*; such a move is not available to one who takes the active intellect to be god, or knowledge already possessed, or that in virtue of which we can use our knowledge at will. This connection is uniquely available to interpretations attributing to the active intellect some role in learning, inquiry, and discovery.

5.4 ARISTOTLE'S PASSIVE INTELLECT

In this chapter I have so far addressed the most pressing question that remained for us at the end of chapter two: what activity does “activating potentially intelligible objects” describe? A second pressing question also arose for us at the end of that chapter regarding the relationship between potentially intelligible objects on the one hand and the passive intellect (νοῦς παθητικός) on the other. I shall now briefly draw some conclusions about the passive intellect and consider some consequences of the view so far.

Let us first recall the inconsistent triad that I proposed at the heart of the argument from chapter two. First we arrived at the following proposition on the basis of a close reading of the Light Analogy:

(α) The active intellect acts upon potentially intelligible objects.

This gave rise to a corollary:

⁴⁶³ A similar point may be made, for instance, with respect to the various auxiliary virtues mentioned in the latter chapters of *EN* VI, especially in ch. 9-11. There εὐστοχία is mentioned several times. I must, however, set this issue aside for future consideration.

(α') The active intellect does not act upon the receptive intellect of III.4.

Furthermore, on the basis of Aristotle's terminology and the general correlation between active and passive principles, I put forward a further claim:

(β) The active intellect acts upon the passive intellect of III.5.

I then argued that these two claims, (α') and (β) were jointly inconsistent when taken together with a very common claim in recent secondary literature, what I termed the Contemporary Consensus:

(γ) The receptive intellect of III.4 is the same as the passive intellect of III.5.

In that chapter I argued that the last proposition (γ) ought to be rejected in favor of a distinction between the receptive intellect, which is *not* the proper or proximate patient of the active intellect, and the passive intellect. This resolved the inconsistent triad in favor of claims (α') and (β). However, someone might have worried that there is already some tension between the original claim (α) and (β): how can the active intellect act on both passive intellect *and* on potentially intelligible objects? Given that passive intellect should not be taken to be the receptive intellect of III.4, a preliminary suggestion was that the passive intellect may be that faculty of soul in virtue of which one can grasp potential intelligibility, or again potentially intelligible objects may constitute the cognitive content of the passive intellect. But we were left asking what this content and what this faculty might be. This is especially pressing if the passive intellect turns out to be perishable, as the final line of *de Anima* III.5 suggests.

Those who rejected the Contemporary Consensus in the past have concluded quite straightforwardly that the passive intellect is *phantasia* or some related perceptual faculty, and potentially intelligible objects are *phantasmata*, as I mentioned in chapter two.⁴⁶⁴ They made this identification on the basis of a handful of arguments. In the first place, since passive intellect is said to be perishable, this recalls *de Anima* I.4 in which Aristotle discusses the perishability of various psychic capacities. On one reading of these remarks, he claims that the *common* intellect, unlike intellect properly so-called, is perishable.

The intellect seems to come to be in us being some substance, and it does not perish.

For it may perish most of all as a result of the dulling in old age, but in that case it would be just as it happens in the case of the perceptual organs: for if the elderly person were to receive an eye of a certain sort, he would see just as even a young

⁴⁶⁴ Themistius, Theophrastus, Philoponus, Brentano (1977), Polansky (2007), Gerson (2005). Aquinas is a special case, but similarly attributes it to a perceptual faculty that trades in images (like *phantasia*).

person does. So that old age is not in virtue of having suffered something with respect to the soul, but with respect to that which the soul is in, as in bouts of drunkenness or illness. Indeed, both intellecting and speculating (τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν) weaken because of something else perishing within, but it itself is impassible. But to think and love or hate is not an affection of that [impassible thing], but of this thing which has that [impassible thing], insofar as it has that [impassible thing]. For this reason too, when this has perished, one neither remembers nor loves, for [those activities] did not belong to that [impassible thing], but to the common [thing], which has been destroyed. But intellect is perhaps something more divine and impassible.⁴⁶⁵

While there are other ways to read the lines from the passage, this is certainly one way to take them, according to which a *common* intellect's perishability is cited in *de Anima* I.4. Difficulty arises because of the use of the neuter αὐτὸ and ἐκεῖνο, although it is clear by the end of the passage that this refers indeterminately to the masculine νοῦς. In view of this, it is possible that τοῦ κοινοῦ refers to a "common intellect." And even if not, a connection between I.4 and III.5 is still recommended because both mention our not remembering in view of the imperishability of *nous* in the strict sense. If, given the relative ontological status of perceptual and intellectual faculties by the end of III.4, it is uncomfortable to consider receptive intellect *perishable*, we should be far more comfortable given passages like I.4 to attribute perishability to some lower-level cognitive faculty that perishes when the composite perishes. Perhaps if not a common intellect, it is in virtue of this common *part* that one is said to *use* intellect, while intellect is still regarded as something impassible of itself.⁴⁶⁶

Moreover, the suggestion here is that this common intellect or otherwise common cognitive part is involved somehow in a kind of intellectual activity (διανοεῖσθαι), and this activity seems to

⁴⁶⁵ Cf. *de An.* I.4 408b18-29: ὁ δὲ νοῦς ἔοικεν ἐγγίνεσθαι οὐσία τις οὔσα, καὶ οὐ φθειρεσθαι. μάλιστα γὰρ ἐφθείρετ' ἂν ὑπὸ τῆς ἐν τῷ γῆρα ἀμαυρώσεως, νῦν δ' ὥσπερ ἐπὶ τῶν αἰσθητηρίων συμβαίνει· εἰ γὰρ λάβοι ὁ πρεσβύτης ὄμμα τοιονδί, βλέποι ἂν ὥσπερ καὶ ὁ νέος. ὥστε τὸ γῆρας οὐ τῷ τὴν ψυχὴν τι πεπονθέναι, ἀλλ' ἐν ᾧ, καθάπερ ἐν μέθαις καὶ νόσοις. καὶ τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν μαραίνεται ἄλλου τινὸς ἔσω φθειρομένου, αὐτὸ δὲ ἀπαθές ἐστίν. τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τουδὶ τοῦ ἔχοντος ἐκεῖνο, ἧ ἐκεῖνο ἔχει. διὸ καὶ τούτου φθειρομένου οὔτε μνημονεύει οὔτε φιλεῖ· οὐ γὰρ ἐκείνου ἦν, ἀλλὰ τοῦ κοινοῦ, ὃ ἀπόλωλεν· ὁ δὲ νοῦς ἴσως θειότερόν τι καὶ ἀπαθές ἐστίν.

⁴⁶⁶ On this reading, the common intellect is something common between intellect properly so-called, and the lower-level soul faculties which are actualities of bodily parts. Aristotle considers these very examples of activities that are common to soul and body in *de An.* I.1.

fall short of intellection or speculation (τὸ νοεῖν δὴ καὶ τὸ θεωρεῖν) properly so-called, or at least as these are considered as activities in isolation from the composite, the rational animal. Perhaps the former activity names something that the whole person does, while the latter verbs denote the activities of the intellectual part as such. So, when the composite substance perishes along with the bodily cognitive powers, this common intellect also perishes. This common intellect, then, we might take to be what binds intellect (in the proper sense) to the living composite, in virtue of which we can think, love, hate, etc. (τὸ δὲ διανοεῖσθαι καὶ φιλεῖν ἢ μισεῖν οὐκ ἔστιν ἐκείνου πάθη, ἀλλὰ τοῦδὲ τοῦ ἔχοντος ἐκεῖνο, ἧ ἐκεῖνο ἔχει). On this view, then, the common and passive intellect is a perceptual power that participates in some important way with the embodied intellectual activity of a given rational animal, even if it is not explicitly said to be an “intellect” in *de Anima* I.4.

Further support for the once-familiar idea that passive intellect is *phantasia* (or some similar cognitive power that trades in images) is the idea that, on Aristotle’s view, there is no thinking without an image. Both theoretical and practical thinking alike involve images, as Aristotle says repeatedly. I shall survey these passages very briefly, though even now it is commonly agreed that Aristotle holds at least this much about the role of images in intellectual activity. First in *de Anima* III.7, he says:

For the intellectual soul *phantasmata* serve as perceptible objects [...]. For this reason the soul does not think (νοεῖ) without a *phantasma*. [...] So, the noetic part thinks the forms in the *phantasmata*.⁴⁶⁷

And later in *de Anima* III.8, Aristotle goes on at greater length:

Since, as it seems, nothing at all exists besides those things with extension, separate from the perceptible things, the intelligible objects are in the perceptible forms, both those which are said to be in abstraction and all the states and affections of sensible things. And for this reason it is also not possible to learn or understand anything not having perceived anything, and whenever someone speculates, it is necessary to speculate about something together with a *phantasma*. For the *phantasmata* are just like

⁴⁶⁷ *De An.* III.7 431a14-15, 16-17, b2: τῆ δὲ διανοητικῆ ψυχῆ τὰ φαντάσματα οἷον αἰσθήματα ὑπάρχει [...]. διὸ οὐδέποτε νοεῖ ἄνευ φαντάσματος ἢ ψυχῆ. [...] τὰ μὲν οὖν εἶδη τὸ νοητικὸν ἐν τοῖς φαντάσμασι νοεῖ. There is a discussion of the “snub” in this chapter which is Aristotle’s favorite example for how we ought to conceive of the object of natural philosophy, a form-in-matter. I simply cannot broach this subject here, as it lies downstream of my present discussion. For a helpful discussion of the topic, see Lennox (2008).

perceptible objects, except without the matter. And *phantasia* is distinct from assertion and denial: for the true and false is a combination of intelligibles. But how will the first intelligibles differ from being *phantasmata*? Neither these nor the other intelligibles are *phantasmata*, but they are not without *phantasmata*.⁴⁶⁸

Finally, in the *de Memoria* Aristotle refers back to these passages, saying:

Seeing that we spoke concerning *phantasia* earlier in the books on the soul, that it is not possible even to think (νοεῖν) without a *phantasma*: for the same affection happens in thinking as that very thing which happens also in drawing diagrams. For in that case availing ourselves nowise of the fact that the triangle has a definite quantity, nevertheless we draw it as having a definite quantity. Also the one who is thinking in the same way, even though he does not think of the quantity, places a quantity before his eyes, but does not think insofar as it has quantity.⁴⁶⁹

These passages clearly illustrate that Aristotle thinks that even intellectual activity in its most proper sense (νοεῖν) requires an image in every case, not only to acquire knowledge but also to put it to use. The power of imagination plays an important auxiliary role in episodes of thinking in the proper sense, insofar as it supplies concrete objects in which the intellect can consider the intelligible forms.

Moreover, Aristotle says in these passages that *phantasmata* serve as analogues of the sensible objects in the intellectual case. Indeed, this is precisely what we have been seeking, potentially intelligible objects. Recall that Aristotle says in the above passages that “for the intellectual soul *phantasmata* serve as perceptible objects (αἰσθήματα)”⁴⁷⁰ and “for the *phantasmata* are just like

⁴⁶⁸ *De An.* III.8 432a3-14: ἐπεὶ δὲ οὐδὲ πρᾶγμα οὐθὲν ἔστι παρὰ τὰ μεγέθη, ὡς δοκεῖ, τὰ αἰσθητὰ κερωρισμένον, ἐν τοῖς εἶδεσι τοῖς αἰσθητοῖς τὰ νοητὰ ἔστι, τὰ τε ἐν ἀφαιρέσει λεγόμενα καὶ ὅσα τῶν αἰσθητῶν ἔξεις καὶ πάθη. καὶ διὰ τοῦτο οὔτε μὴ αἰσθανόμενος μηθὲν οὐθὲν ἂν μάθοι οὐδὲ ξυνείη, ὅταν τε θεωρῆ, ἀνάγκη ἅμα φάντασμα τι θεωρεῖν· τὰ γὰρ φαντάσματα ὡσπερ αἰσθητά ἐστι, πλὴν ἄνευ ὕλης. ἔστι δ’ ἡ φαντασία ἕτερον φάσεως καὶ ἀποφάσεως· συμπλοκὴ γὰρ νοημάτων ἐστὶ τὸ ἀληθὲς ἢ ψεῦδος. τὰ δὲ πρῶτα νοήματα τί διοίσει τοῦ μὴ φαντάσματα εἶναι; ἢ οὐδὲ ταῦτα φαντάσματα, ἀλλ’ οὐκ ἄνευ φαντασμάτων.

⁴⁶⁹ *De Mem.* I 449b31-450a7: ἐπεὶ δὲ περὶ φαντασίας εἴρηται πρότερον ἐν τοῖς περὶ ψυχῆς, καὶ νοεῖν οὐκ ἔστιν ἄνευ φαντάσματος—συμβαίνει γὰρ τὸ αὐτὸ πάθος ἐν τῷ νοεῖν ὅπερ καὶ ἐν τῷ διαγράφειν· ἐκεῖ τε γὰρ οὐθὲν προσχρῶμενοι τῷ τὸ ποσὸν ὠρισμένον εἶναι τοῦ τριγώνου, ὅμως γράφομεν ὠρισμένον κατὰ τὸ ποσόν, καὶ ὁ νοῶν ὡσαύτως, κὰν μὴ ποσὸν νοῆ, τίθεται πρὸ ὀμμάτων ποσόν, νοεῖ δ’ οὐχ ἢ ποσόν· ἂν δ’ ἡ φύσις ἢ τῶν ποσῶν, ἀορίστων δέ, τίθεται μὲν ποσὸν ὠρισμένον, νοεῖ δ’ ἢ ποσὸν μόνον.

⁴⁷⁰ *De An.* III.7 431a14-15.

perceptible objects (αἰσθήματα), except without the matter.”⁴⁷¹ This suggests in a rather straightforward way that the *phantasmata* are like the perceptible objects, playing that role in intellection that perceptible objects play in perception. Now, to be sure, he goes on in III.8 to distinguish *phantasmata* from the *noēta*, but everything he says is consistent with the idea that the *phantasmata* should be the *potentially* intelligible objects, the *potential noēta*, without being *noēta* in the most proper sense.⁴⁷²

We thus have very good reason to suppose that *phantasmata* are these potentially intelligible objects to be illumined by the active intellect, which *phantasmata* are cognitions belonging to the power of *phantasia*. So perhaps in virtue of its necessary connection with the proper intellectual faculty, *phantasia* or some similar perceptual power that trades in *phantasmata* can share the name “intellect,” albeit with the modifier “passive.” And it is not unreasonable that Aristotle should consider *phantasia* to be a kind of *nous* in the context of III.5, given that he is happy to entertain this broader way of speaking in III.3 and III.10. In the former passage, Aristotle closely associates the activity of thinking (νοεῖν) with *phantasia*, saying that *phantasia* is one part of thinking.⁴⁷³ In III.10 Aristotle is even more suggestive, saying that *nous* exhausts the cognitive sources of motion in the soul, so long as we posit *phantasia* as a sort of thinking (ὡς νόησίν τινα).⁴⁷⁴ So, given these suggestive remarks, it is not atypical for Aristotle to consider the faculty of *phantasia* to be a kind of intellect. Nor, given what was said above, is it atypical for Aristotle to consider *phantasmata* to play some role as objects of thought, even if they still differ in some subtle but important respects from the intelligible objects properly speaking.

So go my predecessors’ arguments for the idea that passive intellect is *phantasia* (or something quite like it). Furthermore, in view of the preceding sections of this chapter specifying the active intellect’s distinctive activity, an even clearer appreciation of this thought comes into view. In

⁴⁷¹ *De An.* III.8 432a9-10.

⁴⁷² This is consistent with the discussion in the second chapter of the ending of *de An.* III.4, where there will only be *potential* intelligibility in things having matter. By extension, our *phantasmata* of particular things, of things bounded by the here and the now (cf. *APo.* A.31), will similarly be only *potentially* intelligible.

⁴⁷³ Cf. *de An.* III.3 427b27-29: περὶ δὲ τοῦ νοεῖν, ἐπεὶ ἕτερον τοῦ αἰσθάνεσθαι, τούτου δὲ τὸ μὲν φαντασία δοκεῖ εἶναι τὸ δὲ ὑπόληψις, περὶ φαντασίας διορίσαντας οὕτω περὶ θατέρου λεκτέον.

⁴⁷⁴ Cf. *de An.* III.10 433a9-12: Φαίνεται δὲ γε δύο ταῦτα κινουῦντα, ἡ ὄρεξις ἢ νοῦς, εἴ τις τὴν φαντασίαν τιθεῖ ὡς νόησίν τινα· πολλοὶ γὰρ παρὰ τὴν ἐπιστήμην ἀκολουθοῦσι ταῖς φαντασίαις, καὶ ἐν τοῖς ἄλλοις ζώοις οὐ νόησις οὐδὲ λογισμὸς ἔστιν, ἀλλὰ φαντασία.

every case we have considered, the active intellect gives shape to some perceptual *gnōsis*, whether this be actively manipulating a diagram or actively imagining some new perspective. This is the activity which has as its aim the excellent perceptual state of *empeiria*, that grasp of particulars from which the *orthos logos* can proceed by induction. The same can be said of the active intellectual activity for which the teacher is responsible: whether the student or the teacher draws the parallel lines in the diagram, the productive intellectual activity in question is the same. In all cases this is an intellectually driven engagement with perceptual particulars—*phantasmata*—so that the patient and the product of the activity is a perceptual *gnōsis*, the right *phantasma* in which to contemplate the right form.

So, while I have offered a new set of arguments against the Contemporary Consensus and have perhaps told a distinctive story about the active intellect's activity in concrete terms, I have nevertheless maintained with the previous tradition that the *object* of the active intellect's activity is a *phantasma*, something one has in virtue of the power of *phantasia*. In this way I can maintain that the active intellect activates both potentially intelligible objects and the passive intellect which possesses them and makes them cognitively available.

5.5 FURTHER IMPLICATIONS

5.5.1 Non-Rational Experience

My account has affirmed two points which are often seen to be in tension. On the one hand, I have insisted that experience is an excellent state or *hexis* of the perceptual faculty and therefore actually concerns only particulars. It is possible, for example, for someone to possess *mere* experience according to which one is successful in particular cases, but in virtue of which any grasp of a universal is only implicit or potential. This excellent state of the perceptual faculty, I have argued, is achieved by habituation in a way analogous to moral virtue or the mere productive experience of a manual worker.⁴⁷⁵ In the theoretical domain, however, the experience in question is constituted by a

⁴⁷⁵ There is an apparent disanalogy with moral virtue, since moral virtue properly so-called is impossible without the dianoetic virtue of *phronēsis*, which, as a dianoetic virtue, is decidedly *not* acquired by habituation alone. Cf. *EN* VI.13 *passim*. But, an interesting consequence of an analogy, which I cannot explore here, would be that the true and proper *empeiros* must also have the relevant dianoetic virtue. Perhaps the relationship between habituated and dianoetic virtue is alike in all cases.

perceptual *gnōsis* that is some *phantasma* or memory. In this way I have insisted that *empeiria* as such is an excellent perceptual *hexis*. On the other hand, I have argued that experience in most cases is a product of an intellectually-driven process of teaching or inquiry. Although experience itself is constituted by a grasp of particulars in perception, I have argued that experience cannot be achieved without guidance from intellect, at least in most cases.

These views are rarely affirmed together. Those who agree that experience is a *hexis* of the perceptual faculty tend to deny or ignore the relevance of intellect to the acquisition of such experience. Alternatively, those who emphasize the role of intellect properly so-called to the acquisition of experience tend to see experience itself as constituted by a grasp of universals of some sort, already of itself an intellectual *hexis* of some kind. According to the view I have been urging, there is good reason to hold both views in place as I have articulated them, and any apparent tension between them is not decisive.

There are two independent advantages to affirming both points together in the way I have suggested. First, Aristotle tells us that non-rational animals have a small share in experience.⁴⁷⁶ It can be puzzling to understand what Aristotle means by this. He could be denying any relevant respect in which non-rational animals share in experience, minimizing any way in which we might be tempted to attribute *empeiria* to them. Then again, his remark could have a more positive and affirmative sense, as if to concede that non-rational animals can indeed have some share in experience, though to be sure not as substantial a share as we ourselves have, we who live by art and reasoning. My inclination has always been to take Aristotle as making both points here: yes, non-rational animals are in principle capable of experience, but they only achieve it to a small degree. In fact, I take it that this is a plausible and somewhat uncontroversial way to read the line.

It may be that in most of the interesting cases experience is difficult to achieve because our perceptual faculty has to be habituated and trained in complex ways, and being acquainted with the surface features will simply be insufficient. Nevertheless, there may be cases in which the object is simple or sufficiently available to perception that we can come to have experience of it without any active work, either by inquiry or by teaching. I have in mind cases of prey coming to recognize predators, or animals recognizing changes in the weather or automobile traffic patterns. They are capable of *empeiria*, of developing a perceptual *hexis* that is excellent within a certain domain. The

⁴⁷⁶ Cf. *Meta.* A.1 980b26-28: Τὰ μὲν οὖν ἄλλα ταῖς φαντασίαις ζῆ καὶ ταῖς μνήμαις, ἐμπειρίας δὲ μετέχει μικρόν· τὸ δὲ τῶν ἀνθρώπων γένος καὶ τέχνη καὶ λογισμοῖς.

adjective *mikron*, then, might be thought to modify the scope of these domains: animals can have experience according to the proper meaning of the term, but they can only have it with respect to certain salient domains and when the object itself makes things easy for them to grasp. Other animals remain incapable of engaging in an intellectually-driven process to attain *empeiria*, which process is necessary in all cases—both productive and theoretical—that are of interest to us as human beings.

5.5.2 Craft and Light

I promised to return to the Craft Analogy at the end of chapter two. Most of my analysis in this dissertation has been based on a reading of the Light Analogy developed there. While noting the very real tension between the two analogies and between the functional descriptions of the active intellect we might derive from those analogies, I gave precedence to the Light Analogy in that context. Here I must deliver on my promise to read the Craft Analogy in the light of what has come before.

The risk I sought to avoid in the second chapter was giving too much precedence to the Craft Analogy. My concern was that the Craft Analogy very quickly suggests that there is a simple two-place relation in intellect and intellectual activity, and further that the two places are held by receptive and active intellects. After all, I have conceded all along that the matter-like intellect named at the beginning of *de Anima* III.5 is the same as the receptive intellect of III.4. Let us recall that, when III.5 opens, we are invited to see the craft-like active intellect acting upon the matter-like receptive intellect:

[a] And since, just as in the whole of nature there is, on the one hand, some matter for each class [of thing] (and this is that which is capable of being all those things), [b] and there is, on the other hand, something else that is the cause and active principle in virtue of its making all things, [c] such as the art holds with respect to the matter: [d] it is necessary also that these distinctions exist in the soul.⁴⁷⁷

Provisionally, in the second chapter, I focused on the Light Analogy because Aristotle seems to elaborate upon his conclusions above by further specifying the active intellect's activity without

⁴⁷⁷ *De An.* III.5 430a10-14: Ἐπεὶ δ' ὅσπερ ἐν ἀπάσῃ τῇ φύσει ἐστὶ τι τὸ μὲν ὕλη ἐκάστῳ γένοι (τοῦτο δὲ ὁ πάντα δυνάμει ἐκεῖνα), ἕτερον δὲ τὸ αἴτιον καὶ ποιητικόν, τῷ ποιεῖν πάντα, οἷον ἢ τέχνη πρὸς τὴν ὕλην πέπονθεν, ἀνάγκη καὶ ἐν τῇ ψυχῇ ὑπάρχειν ταύτας τὰς διαφοράς.

naming a receptive power. My concern was that the Contemporary Consensus has been motivated in part by giving the Craft Analogy too much interpretive precedence, and that the Light Analogy should instead occupy interpretive pride of place. I was also motivated by the importance of the analogy with perception to Aristotle's account of intellect more generally, which tips things in favor of the Light Analogy in the particular context of *de Anima* III.5. Those considerations notwithstanding, the question for this present section is: since my account has given precedence to the Light Analogy, how do I resolve the tension that still remains between the two analogies, that is, how do I read the Craft Analogy in view of the Light Analogy?

I shall proceed with several attempts at an answer to this question before settling on a satisfactory reply. As a first pass, one might have thought that the active principle in intellectual activity should be the actually intelligible object. Given what precedes in III.4, and the structure of the analogy with perception in that context, we are prepared to see the relation between intelligible object and receptive intellectual power as fundamental. This conception of the relation between intellectual *poiētikon* and *pathētikon* is expected, and so one might naturally conclude that III.5 begins with the search for this *poiētikon*, the intelligible object that is capable of *making* thinking happen. Indeed, perhaps my reading of the Light Analogy even supports something like this view, since the active intellect on my reading is necessary for intelligible objects to be activated, just as light is needed to activate unlit colors. So perhaps the craft-like and active principle Aristotle is pointing out at the start of III.5 is not the active intellect we have been discussing, but rather the activated intelligible object.

This cannot be, however, because there is no space in the text for a transition from the *poiētikon* with which the chapter begins to the conclusion that the *poiētikon* in this relation must be an *intellect*. That is to say: the preliminary Craft Analogy suggests a relation of action and passion between some *poiētikon* and the matter-like receptive intellect, which *poiētikon* Aristotle *immediately* concludes is a “*nous* in virtue of its making all things, as a certain state like light.”⁴⁷⁸ There is therefore no indication in the text that the *poiētikon* with which the chapter begins should be the intelligible object, understood as distinct from the *poiētikos nous* which he goes on almost immediately to posit. We are still left with a tension, then, between one functional description that suggests a two-place relation and another that suggests a three-place one (or perhaps better, two intertwined two-place relations).

⁴⁷⁸ *De An.* III.5 430a15.

As a second pass we might consider the ways in which even the analogy with Craft ought to be considered a three place relation. After all, just on the face of it Aristotle is in the habit of speaking of *three* things in his account of being and change, whether it be form, matter, and composite, or alternatively form, matter, and privation, there is plenty of space in his account for conceiving of the action of art as involving a more complex relation. Perhaps we ought to consider the way in which art acts on matter that is in a state of relative disorder, and as art brings that matter into the relevant state of order the matter itself so-informed comes to constitute the artificial product, for example a house. Indeed, in *On Generation and Corruption*, Aristotle considers the question whether the active principle acts on the matter or the privation, and he seems to conclude that in some way it acts on each of them.⁴⁷⁹ Perhaps, then, in view of our conclusions about the Light Analogy, we could say that art in a way acts on the disorder, making it to be ordered *in the matter*, raising its potential house-formedness to actual house-formedness. All of this formal activity, however, is taking place in and through the matter, so that the progression from disorder to order is constituted in the relevant materials. Accordingly, as soon as the house-formedness is activated, a house has come to be *in* the matter, or perhaps better, the matter has become a house. In this way, then, there are resources available to speak of a more complex set of relations even in the case of craft.

Suggestive as this may seem, however, it will not resolve the principal source of tension between the two analogies. Recall that one of the most important points issuing from my reading of the Light Analogy was that there are distinct and indeed separable activities involved in the case of vision: light can act on an activate colors without thereby activating episodes of vision. Put differently, I have been urging that the former illuminating activity can be accomplished without any visually receptive animals even on scene: the activation of colors is possible without affecting any matter-like receptive principle in view.⁴⁸⁰ But this would be as if the builder could bring about house-formedness apart from the bricks and lumber. The perceptual or visual case offers more space here to distinguish between these several principles, while the artificial case is more tightly bound.

⁴⁷⁹ *GC* I.7 *passim*, but especially 324a15-24.

⁴⁸⁰ Of course, the nature of such an affection, were it to obtain, would be only an affection of a sort, whether it be perceptual or intellectual, in view of the several distinctions of *de An.* II.5.

So, as a third pass, one might say that the Craft Analogy is a less adequate analogy, just as in some significant sense even the analogy with perception in III.4 only imperfectly maps onto the activities and relations involved in thinking. According to this approach, although Aristotle begins by suggesting a two-place relationship between the active and receptive intellects, he immediately sets this aside in favor of a more complex set of relations that is more completely illustrated by the visual case. Against the background of III.4 and indeed even II.5 earlier in the treatise, the affections and relations involved in artificial productions and natural generations are insufficient to describe the intellectual case, so that the most appropriate analogy is with perception. Perhaps this tension is left unresolved, and in fact the tension explains why Aristotle would go on to give the Light Analogy in this context. Perhaps the Craft Analogy is truly insufficient. His account, therefore, may be taken to develop in the course of these several lines, so that a distinction between two relations and activities is introduced on the model of vision, something that is unavailable on the model of craft. If we take the analogy with perception to prevail on the basis of III.4, then we must conclude that the Light Analogy offers a more exact functional description of the active intellect in III.5.

There is one remaining worry, however, and I address it with my fourth and final pass on the question. The separability of these relations that I am insisting upon which obtains in the visual case decidedly does *not* obtain in the intellectual case. Perhaps colors can be illumined and, in some way, move and inform the surrounding media without there being a sighted animal receptive to them. Perhaps there is some sense in which colors can be activated without thereby activating some receptive faculty. While this distinction may still hold in the intellectual case, the possibility of separating these relations does not. As soon as a potentially intelligible object has been activated there is, as it were, nowhere else for it to go except the receptive intellect. Like the potential and actual house-forms which must subsist in the materials, intelligibility must subsist in an intellect. If we understand the receptive intellect to be that which is capable of receiving *logoi*, then as soon as some *gnōsis* is activated by the active intellect, it is made to be a *logos in the receptive intellect*. Put differently, unlike in the perceptual or visual case, there is nowhere for an activated intelligible object to subsist except in the intellect: the objects of thought are *not* external like the objects of perception. Given that Aristotle straightforwardly tells us that this is a point of disanalogy with perception,⁴⁸¹ we might rightly conclude that the analogy with craft suggests something about the intellectual case that

⁴⁸¹ Cf. *de An.* II.5 417b19-24.

perception cannot offer, namely the immediacy of the action of the active principle on matter and privation alike.

If this is right, then both analogies are necessary to zero in on the difficult case of intellect, and in particular the distinctive function of the active intellect. In some significant respect perception still maintains pride of place as a model for understanding intellection. There is an object which acts on some receptive subject, and there is a prior and conceptually distinct activity whereby the object itself is activated and rendered capable of moving and informing the receptive intellect. But unlike perception the objects are internal to the soul, so there is an immediacy and inseparability of these two distinct activities and relations: as soon as an intelligible object is activated, so is the receptive intellect. On my settled view, then, it is important to maintain these conceptual distinctions while admitting their inseparability.

I take this to be important because, on my view, there is some important respect in which the active intellect acts on images *for* the receptive intellect. Those who sought to deny these distinctions even in their reading of the Light Analogy are liable to miss this important point.⁴⁸² I still defend my reading of the Light Analogy, I simply grant that the intellectual case is very difficult to pin down, rendering both analogies necessary to zero in on the truth. The Light Analogy suggests, then, that the active intellect is responsible for some prior activity which prepares images for intellectual consideration by driving inquiry forward, prompting us to see things differently in perception so that the receptive intellect can go on to consider things differently at the intellectual level. The Craft Analogy suggests, however, that with every perceptual adjustment prompted by the active intellect there is immediately and by that very act an adjustment of our intellectual considerations in the receptive intellect.

To take a brief example: perhaps one sees a bright spot on the wall and, at first, concludes that it is coming from some flashlight shone through the window or perhaps held by one's toddler. Here some perceptual deliverance prompts reflective consideration by the receptive intellect. But that conclusion might strike one as odd. "My son is napping, and why would someone be shining a light through my window? 'Michael, is that you?' Perhaps he did not fall asleep, and he has snuck down the stairs to bother me. No, guess not. Could anything else be causing this? Wait, it just moved slightly when I turned my body and called my son's name. Let me try doing that again. Ah, perhaps I'll now try jiggling my watch. Yes, that's what it was, just the sun reflecting off the face of

⁴⁸² Cf. e.g. Frede (1996b).

my watch.” As soon as one manipulates the perceptual deliverances by jiggling one’s wrist, the character of the perceptual cognition changes, prompting an immediate change in one’s reflective considerations about the source of the light. My suggestion is that the active intellect is responsible for the active perceptual engagement and searching for answers, which is an importantly distinct though indeed inseparable activity from the speculation one immediately engages in on the basis of that perceptual engagement. There is, of course, some feedback going the other direction, between these reflective conclusions and further active engagement, so that all of these activities seem to feed into one another in intuitive ways, hence the importance of the Craft Analogy. But I do not wish to set aside the distinctions for which I have been urging throughout this dissertation on the basis of the Light Analogy. In short, the case of intellect is *sui generis* in many respects, and in this respect, at any rate, we must rely on two imperfect analogies to zero in on the correct account.

5.5.3 (Non-)Intermittent Thinking

There is another remaining issue of application that arises for this theory of the active intellect’s role, in particular concerning Aristotle’s remark that the active intellect is “essentially in activity” and that it “does not at one time think and at another time not think.”⁴⁸³ These comments suggesting the non-intermittence of the active intellect’s activity lent some initial support to the idea that it is simply the divine mind, since human intellectual activity is explicitly said to be intermittent (as Aristotle mentions briefly).⁴⁸⁴ Since this feature is explicitly denied of the active intellect, it follows (so these interpreters argue) that Aristotle must be speaking of something more perfect than a mere human intellect in this passage.⁴⁸⁵ Alternatively, this remark lent some support to the idea that active intellect is simply the state of knowledge: knowledge itself is unmoved and so it does not at one moment think and at another moment not think, but (so the story goes) knowledge itself is continuously possessed and remains unmoved whenever an individual knower thinks, however intermittently these episodes of thinking may themselves occur.⁴⁸⁶ In stark contrast with these views, the idea that the active intellect is simply that intellectual faculty in virtue of which particular

⁴⁸³ *De An.* III.5 430a18, 22.

⁴⁸⁴ Cf. *de An.* III.4 430a5-6.

⁴⁸⁵ Cf. e.g. Lear (1988) 141.

⁴⁸⁶ Cf. e.g. Polansky (2007).

episodes of human thinking get going has some trouble with this remark. According to that interpretation, the active intellect's activity is tied so closely to particular episodes of thought that it is hard to imagine it not sharing their intermittent character.⁴⁸⁷ We ruled out all these views earlier in the dissertation for unrelated reasons; but how does the interpretation I have been urging handle the non-intermittence of the active intellect's thinking?

My view has sought a middle way between two of the alternatives just mentioned: between the one idea that the active intellect acts in a general way upon all of nature, rendering it to be intelligible for all knowers indiscriminately, and another that it acts in a particular way for particular knowers, initiating in some way or another particular episodes of thought for each knower whenever they might wish. My view has been that the active intellect acts for particular knowers but not as such initiating particular episodes of thought. Rather, the active intellect acts upon what is perceptually available, rendering what is potentially intelligible in perception to be actually intelligible for intellectual consideration by the receptive intellect. Once the intelligible object is activated and made to be actual for a given knower, this object goes on to act on that knower's receptive intellect, rendering the *conceptual* relationship, at any rate, between the active intellect and particular episodes of thought an indirect one. It is the illumined intelligible object which most properly speaking acts upon the potential intellect, not the illuminating active intellect itself. Accordingly there is some conceptual space, on my view, between the active intellect's activity and the intermittent character of human thinking, even if (as the previous discussion conceded) there is an immediacy and inseparability of these activities in any particular case. On the other side, unlike rival god-views my view maintains that the active intellect plays some role for particular knowers, if not as such initiating particular episodes of thinking.

It is worth noting the important difference between the character of the active and receptive intellects' intellectual activities on my view. We might be tempted to consider their "thinking" in a univocal way, so that the active intellect's non-intermittent thinking implies that it is always contemplating all intelligible objects. But recall that III.5 opens by distinguishing these two intellects

⁴⁸⁷ Cf. e.g. Wedin (1988). Of course, Aristotle does say that we can think at will *should nothing stand in the way*. It is possible that someone defending this line would attribute the intermittent character of human thought to these intellectual obstructions. However, it seems that even when we are not obstructed in this way, we nevertheless at times do not wish to contemplate those things we could contemplate, if we wanted to. It seems that our very intellectual willing is intermittent. Or put differently, not all intermittency of human thought is attributable to obstructions: sometimes it is attributable to whether or what we, in fact, wish to contemplate at a given moment.

precisely along these lines: one intellect thinks by *becoming* all things, that is all intelligible objects, while another intellect thinks by *making* all things. It would be a mistake to understand the non-intermittence of the active intellect's activity as a non-intermittence of some contemplative or theoretical intellectual activity. On the contrary, its distinctive activity is active or productive, and it is to that kind of thinking which Aristotle refers, saying "it does not at one time think and at another time not think." In other words, the active intellect is always engaged in the mode of thinking proper to it, in active intellectual illumination and not receptive intellectual consideration. Accordingly, the active intellect need not be continually contemplating all the intelligible objects, making Aristotle a kind of super-rationalist, as some have supposed.⁴⁸⁸

Having opened up this interpretive space and having reiterated this crucial clarification regarding the active intellect's activity, we can now make sense of the idea that the active intellect plays a role in the intellectual lives of particular knowers, intellectual lives that are intermittently active, while the agent intellect's own proper activity remains non-intermittently at work. The activity of seeing requires not only light but a visible object. It is the illumined visible object which most properly acts on and informs the visual faculty. It is a consequence of Aristotle's view in the perceptual case that no amount of light can activate the visual faculty in the absence of a visible object.⁴⁸⁹ To alter an example used in an earlier chapter: we might imagine (*per impossible*) a deer whose eyes are always open and whose environment is always illumined, but whose environment is intermittently populated with visible objects, being sometimes present and sometimes absent. In that case, the deer's intermittent visual activity would be attributable not to the absence of light but rather to the occasional absence of suitable objects to be illumined and to be seen.

We might draw a similar conclusion in the case of the intellect. Perhaps human beings have some intellectual capacity in virtue of which we are always seeking and examining what is perceptually available to us, working to uncover what can be known and discovered amid what is being or has been perceived. But the perceptual faculty may not always be making available suitable perceptual content, or any content at all, for the active intellect's illumination or for the receptive intellect's consideration. The essential and non-intermittent activity of the active intellect is not sufficient unto itself to guarantee the non-intermittence of "ordinary" human thinking, at least not

⁴⁸⁸ Cf. e.g. Kahn (1981) 410-414.

⁴⁸⁹ Cf. *de An.* II.7 418b4-6: διαφανὲς δὲ λέγω ὃ ἔστι μὲν ὄρατόν, οὐ καθ' αὐτὸ δὲ ὄρατόν ὡς ἀπλῶς εἰπεῖν, ἀλλὰ δι' ἄλλόριον χρῶμα.

on the view I have been urging. Rather, the active intellect requires a suitable patient, some perceptual content or *phantasma* to be illumined. After all, as we have seen, Aristotle insists on several occasions that there is no thinking without an image, and that human thinking is characterized by thinking forms in an image.⁴⁹⁰ At times there is simply nothing to be illumined and therefore nothing to be seen, but it does not follow that the light is only intermittently shining.

There is a worry, however, about whether this truly counts as non-intermittence. After all, the activity of the agent is (oftentimes) in the patient, as Aristotle says of perceptual activity in *de Anima* III.2 and of motion quite generally in *Physics* III. A builder is intermittently engaged in building activity, even though this intermittence is sometimes due to a lack of suitable materials on which to build. Imagine the builder who is waiting for a late delivery of lumber or bricks: whether he is engaged in the activity of building is very much dependent on the availability of suitable materials. Similarly, (the objector presses) the active intellect cannot be always engaged in intellectual illumination since there are not always suitable intelligible objects for it to illuminate. Not only do we, in virtue of our receptive intellects, think intermittently, but the active intellect itself would think intermittently due to the unavailability of suitable objects, what Aristotle sometimes calls “an eclipse of perception.”⁴⁹¹

The objector presses on this point in order to restore the view that the active intellect is the god. Only the divine substance could be essentially in activity, and so only the divine intellect’s activity could be non-intermittent in the required sense. Perhaps the objector takes my point that the active intellect illuminates and does not (or not only) create intelligibility *simpliciter*, that is to say that it activates an object that is already *per se* intelligible in potentiality. Perhaps the divine substance is ultimately responsible for this potential intelligibility as well, but not *qua* active intellect. Yet even conceding this, the objector wishes to maintain that one universally shared active intellect is responsible not only for the existence of *potentially* intelligible objects in themselves, but also for their being *actually* intelligible for particular knowers. Perhaps it does this, in the first place, by acting as a unifying intelligible medium by means of which determinate forms are known by us and, in the

⁴⁹⁰ Cf. *de An.* III.7 431b2.

⁴⁹¹ *APo.* A.31 88a12: αἰσθησεως ἔκλειψιν. I suspect this is another of Aristotle’s jokes, given that the preceding discussion is about seeing, hunting down, and contemplating the cause of a lunar eclipse.

second place, by acting and indeed intervening in more particular ways for particular knowers, perhaps by inspiration or revelation.⁴⁹²

I shall consider other arguments in favor of the god-reading in the following section. But in responding to this particular point, we might first reflect upon the way in which light is essentially an activity or actuality of a transparent medium. Light, in fact, is both a state (ἔξις) and an activity (ἐνέργεια), and this is perhaps the most important point of comparison between the active intellect and light. Light is an active state of a transparent medium, that which activates colored objects to act and be seen through that medium. It is a state insofar as it is a stable disposition of the medium, something the medium can possess or lack, but it is an activity insofar as it activates and energizes visible objects to act through it. Presumably the active intellect is the same, being some intellectual activity or active state by means of which intelligible objects are activated and come to be actually understood.

In the first place we should note, however, that light's being essentially an activity does not imply that there is no darkness: rather, this claim means that light is *as such* an active state of a transparent medium. Similarly, the mere fact that the active intellect is essentially in activity (τῆ οὐσίᾳ ὄν ἐνεργείᾳ) does not of itself imply that this intellectual light is, as it were, always on. What makes the active intellect a special and particularly difficult case is Aristotle's other remark that it "does not at one time think and at another time not think," and not (or not merely) the claim that it is essentially in activity. This is perhaps merely a clarification rather than a reply, but on a point that demands clarity.

To develop a more substantive reply to the objection more determinately stated, let us recall another point I made earlier in the dissertation in the discussion of the Light Analogy. I argued that there is a sense in which colors can be said to be in activity even though they are not yet being seen by any sighted animal. While it is important to maintain that the fullest activity of the perceptible object is in the perceiver, and furthermore that the activities of seeing and being seen are a single

⁴⁹² Aristotle seems open to the possibility of this at *EE* 1248a17ff. There is of course a tradition insisting upon this possibility by medieval interpreters of Aristotle, especially those who hold that the active intellect is god or some other universal substance emanating therefrom (like Maimonides, Avicenna, and Averroes). Even those who (like Aquinas) deny the god-reading nevertheless leave open the way in which the god could choose to inspire a particular knower to grasp the truth, being ultimately that *lux vera quæ illuminat omnem hominem venientem in hunc mundum*. On this latter point, see especially Aquinas' *Quaestiones Disputatae de Anima* art. 5 *corpus*.

and identical *energeia* though the essence of these activities is not the same,⁴⁹³ nevertheless there is an important difference between a colored object existing in the dark and the same object once it has been brought to light even before it comes to be seen. In the latter case its color can already be said to be in activity, activated, *energized*: an illumined flower is immediately ready to be seen as soon as our deer opens his tired eyes, and even before this happens it is already engaged in an activity *qua* colored and *qua* visible insofar as it is occupying and informing the medium between the sleeping deer and itself. So, even though such an object is not fully engaged in its proper activity of being seen, it is nevertheless already activated and energized *qua* colored. Perhaps a related (though not directly analogous) point can be made about the illumined medium itself: even in the absence of colored objects to activate and energize, a given medium can possess the active *hexis* of light and in this way be in activity. Neither light nor a colored object needs to be now presently acting upon its respective patient in order to be active: light and color can be “at work” in some meaningful sense without presently working *on* anything.

So, let us return to the intellectual case. To be sure, I have conceded that these activities are inseparable in the case of illumined intelligible objects and the receptive intellect. As soon as an intelligible object is activated, it is activated in and for the receptive intellect. But with respect to the active intellect, perhaps an analogy can be drawn with the above point in mind. Just as a medium can be illumined without any object being illumined, as it were, on the other end, so too the active intellect can be active without presently activating any object for thinking. In this way, the active intellect could be non-intermittently active without always working on some object. It would be necessary, however, to say that any intermittent illumination must be due to the intermittent presence of objects: the light might always be on. To reply to my objection, there is perhaps a disanalogy with the builder in this regard. Not every break from building is attributable to the lack of suitable materials: the builder sometimes simply does not wish to build. If, in contrast and *per impossible*, we imagined a builder who was always ready to work on whatever materials were brought to him, we might have a more suitable analogy. In this case it would be right in some sense to say that the builder does not at one time build and another time not build: he is always at work building, because he is even active while he awaits the next delivery of bricks or lumber.

While unintuitive in the case of building—there is surely no builder who builds non-intermittently even in this qualified sense!—this conception of non-intermittence is nevertheless

⁴⁹³ Cf. *de An.* III.2 425b26-426a28.

quite intuitive in the case of intellect. All humans, from toddlers on up, are continually engaged with their world in perception, seeking out causes and explanations. Perhaps some are more quick-witted than others, that is to say, perhaps for some the light is brighter than others. Still, it makes good sense to say that all human beings are actively engaged with their world in perception to seek out and discover the true causes of things. This activity is perhaps just as natural to us as the generalizing activity of the receptive intellect: the challenge in both cases is to specify norms about how we get things *right*. But in the psychological context, at any rate, Aristotle is only concerned with a discussion of the psychic powers that are responsible for the intellectual activities we regularly perform, both virtuous and not.

5.5.4 Divine and Human Intellects

I noted in the second chapter that my approach would be to set aside many of the issues that have dominated recent debates about the active intellect. One question in particular which I proposed to set aside was whether the active intellect was a divine or a human intellect. I now return briefly to this question in light of a more determinate answer to the question with which we began, “what does active *nous* activate?” This is especially important since I have been talking, especially in the last several sections, as if my view entails that the active intellect belongs individually to each human. I shall now explain in more explicit terms why I take this to be true.

Now that we see that the active or poetic intellect of *de Anima* III.5 has a role in inquiry and discovery, and indeed a role in an individual’s active engagement with the world in perception, the account leans very heavily against this intellect being identical with the divine intellect. After all, even by the end of the second chapter we were in a position to rule out the most popular readings of this stripe, those who see the active intellect as principally answering an ontological need, guaranteeing the intelligibility of nature in general. While arguing that the active intellect is like light in rendering things available for some cognitive faculty, these interpreters conclude that *general* intelligibility is what this productive intellect must produce. But, as we saw, this would be to understand light as endowing the world with color. Whatever effect the divine mind has on the intelligibility of the world in general will be more like giving objects color, not like revealing the colors that are already there. I have argued on the basis of the Light Analogy that such a reading cannot hold.

In view of this, however, I must make a series of concessions and qualifications. I grant that, on the authority of *Metaphysics* Λ, Aristotle’s divine intellect is indeed active and poetic: it would be

right to see the divine mind as responsible for production and action (ποίησις) without qualification. So, given the intellects distinguished in *de Anima* III.5, it is true that the active intellect most closely approximates and resembles the divine intellect. Furthermore, I am happy to concede that the world must already be of a certain character for human inquiry and intellection to be possible: the world must already be colored for light to reveal anything to sighted animals. Similarly, then, the world must already be potentially intelligible antecedent to the active intellect's activity, just as the world must already be potentially colored antecedent to the activity of light. If Heraclitus were right and everything were in flux, Aristotle would not be able to tell this story.⁴⁹⁴ And finally, it seems likely that some causal chain terminating in the divine *thought thinking itself* will explain that things in our world both have color and are, in some broad and generic sense, intelligible, just as the divine substance is ultimately responsible for every change, including perhaps particular episodes of thinking.⁴⁹⁵ But as we found even by the end of the second chapter of this dissertation, these activities cannot be that for which the active intellect of the *de Anima* is responsible, nor that which it is said to make or activate.

Here someone might object on the following lines: while I have pointed to the case of discovery as a clear instance of an individual's active intellect at work, I have also conceded that in the majority of cases it is the active intellect of the teacher that is principally responsible for uncovering the subject matter for the student. Accordingly, I have already recognized the possibility of an external agency whereby something is made intellectually available for some particular knower. Why not allow that the god could play a role in the process understood in this way? That is, even if the active intellect's activity is as I have described, why not suppose that the divine intellect could accomplish this?

⁴⁹⁴ I here point to *Meta.* A.6 for an important discussion of how Aristotle understands his departure from Plato. It is because he rejects Heraclitean flux that he takes himself to be free of a Platonic heaven of Forms. Whether this is accurate as a reading of Plato himself is controversial, but the chapter is nevertheless helpful in understanding how Aristotle understands his own view.

⁴⁹⁵ Again, see *EE* 1248a17ff. I, however, take this to be a fortunate gift of the god for someone who, although irrational, hits upon the truth: ἔχουσι γὰρ ἀρχὴν τοιαύτην ἢ κρείττων τοῦ νοῦ καὶ τῆς βουλευσεως (οἱ δὲ τὸν λόγον: τοῦτο δ' οὐκ ἔχουσι) καὶ ἐνθουσιασμόν, τοῦτο δ' οὐ δύναται. ἄλογοι γὰρ ὄντες ἐπιτυγχάνουσι: καὶ [35] τούτων φρονίμων καὶ σοφῶν ταχεῖαν εἶναι τὴν μαντικὴν, καὶ μόνον οὐ τὴν ἀπὸ τοῦ λόγου δεῖ ἀπολαβεῖν, ἀλλ' οἱ μὲν δι' ἐμπειρίαν, οἱ δὲ διὰ συνήθειάν τε ἐν τῷ σκοπεῖν χρῆσθαι: τῷ θεῷ δὲ αὐταί.

Although I recognize the divine resonances whenever Aristotle describes *nous* in the *de Anima*, I am not sure I find a place for the divine mind itself in these activities. A consequence of the proposed alternative, for example, is that every case of discovery is attributable to the divine mind as teacher in a particular case. The usual proponents of reading the divine mind into III.5 need not face this consequence: but because our present objector is (by stipulation) convinced by my argument against the more common god-readings, to see the divine mind at work in III.5 he must attribute some action to the divine mind in particular cases of learning and discovery. I resist this because when Aristotle says that his predecessors and contemporaries failed to realize or discover some fact of nature, he never attributes this to an eclipse of divine illumination, but always to an eclipse of perception,⁴⁹⁶ a failure to ask the right questions,⁴⁹⁷ a failure to dissect the internal organs according to an appropriate method,⁴⁹⁸ and the like. So although I recognize the possibility of this view, I do not find it in Aristotle. I do admit, however, that simply because we must attribute to each individual the power and activity of intellectual-making-available, we need not deny that this activity can be accomplished externally. Just as teachers can accomplish the lion's share of this process for the student, so too could a god. While there is little in Aristotle to suggest that the god has revealed anything to human beings, our reading of his account of intellect need not rule this out. We must simply avoid the consequence that would require the god to reveal worldly truths to us in every case of discovery, a view that even Thomas Aquinas, a believer in divine revelation, sought to avoid.⁴⁹⁹

⁴⁹⁶ Recall *APo.* A.31 88a12. See also *APo.* A.18 *passim*.

⁴⁹⁷ Cf. e.g. *GA* III.5 756a30-b12.

⁴⁹⁸ Recall *HA* 3.3 513a13-15: Χαλεπῆς δ' οὔσης, ὥσπερ εἶρηται πρότερον, τῆς θεωρίας ἐν μόνοις τοῖς ἀποπεπνιγμένοις τῶν ζώων προλεπτυνθεῖσιν ἔστιν ἰκανῶς καταμαθεῖν, εἴ τιτι περὶ τῶν τοιούτων ἐπιμελές.

⁴⁹⁹ *Questiones de Anima* q. 5 *corpus*: "It is obviously more reasonable to maintain that the agent intellect is unique and separate, than to hold that this is true of the possible intellect. For the possible intellect, in virtue of which we are capable of understanding, is sometimes in potency and sometimes in act. The agent intellect, on the other hand, is that which makes us actually understanding. Now an agent exists in separation from the things which it brings into actuality, but obviously whatever makes a thing potential is wholly within that thing. For this reason many maintained that the agent intellect is a separate substance, and that the possible intellect is a part of our soul. [...And] because the Catholic Faith maintains that God is the agent operating in our souls and not some separate substance in nature, some Catholics asserted that the agent intellect is God himself, who is "the true Light that enlightens every man who comes into this world" (John 1: 9). But this position, if anyone examines it carefully, is seen to be implausible [...]."

An analogy with motion is helpful in understanding the point. Aristotle insists that all motion is ultimately dependent on the existence of an absolutely unmoved first mover, something which is unchangeable and immobile in its very being, being the changeless source of all change. He is not thereby committed, however, to the idea that the divine substance is proximately responsible for each and every particular motion or change: indeed, just as some absolutely immobile substance is necessary to explain motion in general, each particular motion requires that there be some proximately immobile substance or unmoved part relative to the motion in question. Aristotle writes in the *de Motu* that, in the case of animal motion, “if one of the parts is moved, another part must be at rest, and for this reason animals have joints.”⁵⁰⁰ “But,” he goes on to insist, “all rest in it is nevertheless powerless if there is not something external which is at rest and immobile without qualification.”⁵⁰¹ Similar things can be found in the extended discussions of motion in the later books of the *Physics* about motion in general (though animal motion is peculiarly helpful in understanding the intellectual case). So, some part of an animal must be at rest relative to some particular motion for any given particular motion to be possible, but this relative immobility is ultimately derived from and dependent on the *per se* immobility of the divine substance.

By insisting on both claims, Aristotle provides a mean between two extremes in the account of motion, a move which we might have come to expect from him. On the one hand, one might deny that the existence of a god is necessary for motion in general, insisting on the sufficiency of proximate causes to explain every concrete motion and thereby motion in general. On the other hand, one might deny that the existence of proximate causes is necessary in addition to the causal action of a god, insisting on the sufficiency of a god to explain not only motion in general but also every concrete case of motion. In the former case, he need not speak of a god, in this context at any rate; in the latter case, animals need not have joints. By insisting on both, however, he holds that animal self-motion must participate, in some measure, in the immobility of the divine substance.

What’s the upshot for the intellectual case? Perhaps it is right that intelligibility in general and even intellectual activity in general depend upon divine *thinking thinking thinking*, as Kosman has famously put things. But we are not forced to conclude thereby that there is no active principle of thinking within the human soul itself. Just as animal motion requires moveable and (relatively) immovable parts, so too human thinking requires receptive and active parts. Just as animals might be

⁵⁰⁰ *De Motu* 1 698a16-17.

⁵⁰¹ *De Motu* 1 698b8-9.

said to participate in the immobility of the divine substance in a relative way every time an animal moves itself, so too humans might be said to participate in the active and productive character of the divine substance in a relative way every time we inquire, discover, and learn. Just as in the case of motion, so too in the case of intellection, perhaps it is worth holding onto the necessity of the divine ultimate cause as well as more mundane proximate causes. While the divine intellect is indeed an active intellect *par excellence*, it is not that active intellect which is Aristotle's subject in *de Anima* III.5. It is truly, as Aristotle says, something *divine in us*.⁵⁰²

5.5.5 Differing (Active) Intellectual Abilities

One final issue concerns how two knowers could differ in respect of their active intellect. This question immediately follows upon the preceding considerations, though it was not foreseen in chapter two: if the light is always on, as it were, and yet is individuated for each human knower, does that mean that this intellectual light always shines with the same brightness for every human knower? On the one hand, it seems quite obvious that human beings differ widely in their ability to make scientific discoveries. On the other hand, however, we might be inclined to see the active intellect as operating with the same intensity for all humans. Given its non-intermittent and essential activity, its immateriality and impassibility, and finally its resemblance to the divine intellect, we might be inclined to say that in each human *qua* intellect it cannot differ. Given all of these features, we might conclude that it cannot of itself admit of a range of strength or weakness across knowers of varying intellectual strengths and weaknesses. Accordingly, we might feel pressure to look elsewhere for the cause of this variation.

The first available move has a similar shape to the one in the preceding sections. Perhaps the active intellect of each human being is equal in its activity and strength, and the difference in intellectual achievement is attributable rather to variability in the matter upon which the active intellect works, that is, to a difference in the *phantasmata* and perceptual *gnōseis* themselves. Between two knowers of different intellectual strength, perhaps there is simply a difference in their perceptual

⁵⁰² I by no means wish to insist heavily on the results of this section, nor have I given full treatment of all of the views that escaped my argument in the second chapter (e.g. Alexander, Avicenna, Averroes). My view suggests that the active intellect is a power of the individual soul, and I wanted to register this suggestion without going on to give a full treatment of the issues involved. Nor do I wish to consider here issues of separability, incorruptibility, or immortality, all of which I set aside in the second chapter and continue to leave aside for the purposes of this dissertation.

capacities and the precision or strength of the images issuing from their respective perceptual activity. Given that Aristotle often attributes the failure of various predecessors to discover something to their not grasping something perceptually, this seems like a promising way forward.

However, since I have proposed that the active intellect's activity is precisely in working on those images, it would be difficult to explain two people who differ in their intellectual ability upon perceiving the very same object from the very same perspective. Imagine, for example, two students who are both presented with an undivided diagram of a triangle. The perceptual *gnōsis* on which the active intellect works is exactly the same. The intellectual act whereby one draws a parallel line is entirely the work of the active intellect, so that if one student is capable of seeing this move and the other not, or perhaps not as quickly, it is difficult to attribute this to a difference in the strength of their *perceptual* capacities. Furthermore, one of the advantages of my reading was that it can explain places where Aristotle seems to speak of a wholly different kind of intellectual virtue or excellent *hexis*, a skill in hitting the mark which seems to be the work of the active intellect excellently accomplished. If we maintain that all humans have active intellects of the same strength, then we can no longer attribute these *eustochastic* virtues to the active intellect. After all, the eustochastic virtue of quick-wit is posited precisely to explain the difference between people witnessing the very same *phenomena*.

Given the constraints of the preceding two sections, then, what ought we to say about differences in the strength of the active intellect from one person to another? Perhaps, once again, the comparison with light offers a clue. Light is essentially in activity, being the active state of a medium, no matter how bright or dim the light may be. Perhaps we can admit of differences from one person to another, or indeed differences in the strength of a single person's active intellect in the course of their lives. For the active intellect to be non-intermittently in activity (like the ever-active builder), we need not insist that every person is non-intermittently engaged in inquiry with the same measure of success. Although any given active intellect does not admit of being exercised at various degrees of activity or inactivity—the light remains always on at its brightest—what constitutes a given active intellect's "brightest" may vary from one person to another. All that non-intermittence secures is that the active intellect must always be on. This is perhaps like insisting that every cup must be full: such a claim tells us nothing about the relative capacities from cup to cup.⁵⁰³

⁵⁰³ I owe this example to St. Therese of Lisieux, who wrote in her autobiography (1996): "I once told you how astonished I was that God does not give equal glory in heaven to all His chosen. I was afraid they were not at all equally happy. You made me bring Daddy's tumbler and put it by the side

The objector might further press that in III.5 Aristotle says that the active intellect is essentially *an* activity, and therefore does not admit of different strengths as a capacity, because it is not a capacity at all.⁵⁰⁴ This point is more obviously made in the case of Aristotle’s god: it is not that the god’s potential is always being actualized, but that there is no potentiality in god at all: the divine substance *just is* pure activity.⁵⁰⁵ It is, however, much harder to explain how a part of the human soul could be essentially *an* activity, especially in view of the intermittent availability of its objects. As I have said (though more weakly in what precedes), I prefer to read “being essentially *in* activity” (ἐνεργεῖα) with most manuscripts at that line, making my case a little easier. While the divine mind is both essentially *an* and essentially *in* activity, something that only essentially *in* activity may itself be a potency that is always being activated, perhaps like the heavenly bodies whose potential to move is always being actualized.⁵⁰⁶ I do not wish to push too hard on this point, however, since it is sufficient for me to make available this other reading of the line. If the active intellect is essentially *in* activity, but not essentially *an* activity, then it is available to me to say that particular active intellects may vary in strength and even admit of various *hexeis* without denying its essential and non-intermittent activity *as such*. In this way, my reading can explain the divine resonances of *de Anima* III.5 while also accommodating the eustochastic virtues mentioned in such places as *Posterior Analytics* A.34 and *Parts of Animals* I.1.

of my thimble. You filled them both with water and asked me which was fuller. I told you they were both full to the brim and that it was impossible to put more water in them than they could hold.” Setting aside the orders of grace and heavenly glory, the point is helpful for our investigation: while the active intellects of the genius and the common man are alike in that both capacities are ever in activity, they need not be equal in strength *as capacities*, just as the completely filled cups need not be equal in capacity.

⁵⁰⁴ The objector is reading ἐνεργεῖα at 430a18, against most manuscripts.

⁵⁰⁵ Cf. *Meta.* Λ.6 1071b19-20.

⁵⁰⁶ Cf. Frey (2015) who argues that the heavenly bodies possess *dynameis* (according to claims in the *Cael.*) that are always actual, and therefore never *dynamei* (according to claims in *Meta.* Θ.8).

5.6 INQUIRY AND ABSTRACTION

My view of the active intellect seems to resemble one defended by Aquinas. There are important and interesting differences, however, at least in how Aquinas's view has been understood. In broad agreement with my view, he writes:

Wherefore some held that this intellect, substantially separate, is the active intellect, which by lighting up the phantasms as it were, makes them to be actually intelligible. But, even supposing the existence of such a separate active intellect, it would still be necessary to assign to the human soul some power participating in that superior intellect, by which power the human soul makes things actually intelligible. Just as in other perfect natural things, besides the universal active causes, each one is endowed with its proper powers derived from those universal causes: for the sun alone does not generate man; but in man is the power of begetting man: and in like manner with other perfect animals.⁵⁰⁷

Also in another place:

Therefore, if the possible [sc. potential or receptive] intellect has to be moved by an intelligible, this intelligible must be produced by an intellective power. And since it is impossible for anything in potency, in a given respect, to actuate itself, we must admit that an agent intellect exists, in addition to the possible intellect, and that this agent intellect causes the actual intelligibles which actuate the possible intellect.⁵⁰⁸

There are many points of similarity to note here. First, the active intellect is neither god nor some single separated intellect, but a power of each individual human soul. Moreover, its distinctive activity is to actualize intelligible objects which then go on to actualize the receptive (his "possible") intellect at a later step. Aquinas' view also recognizes the two distinct causal relations that figure in my reading of Aristotle, namely one between the active intellect and potentially intelligible objects and another between actually intelligible objects and the receptive intellect. Furthermore, although this is not mentioned in the above quote, Aquinas is also committed to the idea that potentially intelligible objects are images, that is, particulars grasped in perception, so that when actualized the receptive intellect can contemplate a universal form in a given concrete image. Accordingly, the

⁵⁰⁷ *ST* 1a q. 79 art. 4 *corpus* (tr. English Dominican Fathers).

⁵⁰⁸ *Quaestiones de Anima* q. 4 *corpus* (tr. Rowan).

active intellect acts upon the passive intellect, which is understood to be a perceptual power that makes images available for contemplation.⁵⁰⁹

My account, therefore, accords with Aquinas' in several respects. There is broad agreement about the relations involved in intellection and the distinctive activity of the active intellect. He, however, goes on to speak of the active intellect in the following way which I have avoided, immediately following the passage just quoted:

Moreover, it produces these intelligibles by abstracting them from matter and from material conditions which are the principles of individuation. And since the nature as such of the species does not possess these principles by which the nature is given a multiple existence among different things, because individuating principles of this sort are distinct from the nature itself, the intellect will be able to receive this nature apart from all material conditions, and consequently will receive it as a unity [i.e., as a one-in-many]. For the same reason the intellect receives the nature of a genus by abstracting from specific differences, so that it is a one-in-many and common to many species.⁵¹⁰

And in another more familiar place:

According to the opinion of Plato, there is no need for an active intellect in order to make things actually intelligible; but perhaps in order to provide intellectual light to the intellect [...]. But since Aristotle did not allow that forms of natural things exist apart from matter, and as forms existing in matter are not actually intelligible, it follows that the natures of forms of the sensible things which we understand are not actually intelligible. Now nothing is reduced from potentiality to act except by something in act; as the senses as made actual by what is actually sensible. We must therefore assign on the part of the intellect some power to make things actually intelligible, **by abstraction of the species from material conditions**. And such is the necessity for an active intellect.⁵¹¹

⁵⁰⁹ Aquinas distinguishes between the common sense, imagination, memory, and the “cogitative power,” the last of which he also calls “passive intellect” and “particular reason.”

⁵¹⁰ *Quaestiones de Anima* q. 4 *corpus* (tr. Rowan).

⁵¹¹ *ST* 1a q. 79 art. 3 *corpus*, my emphasis (tr. English Dominican Fathers).

I have avoided speaking of the active intellect as an *abstractive* power or its activity as *abstraction*, though the differences here may turn out to be subtler than they might, at first, seem. After all, I have relied on the idea that the receptive intellect is capable of considering any particular case in a universal way, this is to say, it is capable of generalizing beyond the “here and now” of a given instance in perception.⁵¹² Even when the content of perception is a *such*, a quasi-universal, nevertheless everything grasped by perception is strictly speaking bounded by the *here and now*, and therefore cannot be universal in the relevant sense, *always and everywhere*.⁵¹³ So on this count we seem to agree.

One further difference is that Aquinas sometimes seems content to say that the active intellect acts upon the potentially intelligible objects *and* on the receptive intellect, also bringing the latter to actuality.⁵¹⁴ It is possible that, on the rare occasion he makes this sort of claim, he may be speaking imprecisely as when Aristotle himself says in one place that “light makes seeing” (τὸ γὰρ φῶς ποιεῖ τὸ ὁρᾶν),⁵¹⁵ a description that coheres neither with the Light Analogy in III.5 nor the more proper treatment of light in II.7. Aquinas clarifies this language in the following way:

The possible intellect cannot be rendered actually cognizant of all natural things by the light of the agent intellect alone, but only by some superior substance which is actually cognizant of all natural things. And if one considers rightly, he will see that, according to the Philosopher’s own treatment of the matter, the agent intellect is not active directly with respect to the possible intellect, but rather with respect to phantasms which the agent intellect makes actually intelligible. And it is by the phantasms thus actualized that the possible intellect is actualized when, as a result of its union with the body, its vision is turned to inferior things.⁵¹⁶

⁵¹² Aquinas also follows Aristotle in using the phrase “here and now” at *ST* 1a q. 107 art. 4 *corpus*: Respondeo dicendum quod locutio Angeli in intellectuali operatione consistit, ut ex dictis patet. Intellectualis autem operatio Angeli omnino abstracta est a loco et tempore, nam etiam nostra intellectualis operatio est per abstractionem ab hic et nunc, nisi per accidens ex parte phantasmatum, quae in Angelis nulla sunt.

⁵¹³ See especially *APo.* A.31 at 87b28-33 for Aristotle’s explicit commitment to this, discussed above.

⁵¹⁴ Cf. e.g. *ST* 1a q. 84 art. 4 ad 3: Intellectus noster possibilis reducitur de potentia ad actum per aliquod ens actu, idest per intellectum agentem, qui est virtus quaedam animae nostrae, ut dictum est...

⁵¹⁵ *Sens.* 447a10.

⁵¹⁶ *Quaestiones de Anima* q. 18 ad 11 (tr. Rowan).

Clearly, then, he is committed to these distinctions, so that the agent intellect most properly is active with respect to *phantasmata* and not directly on the receptive intellect. So perhaps when Aquinas speaks less precisely, he means that these activities, while conceptually distinct, are nevertheless actually inseparable. So that, as we have seen, the active intellect in a secondary way causes the actually intelligible object to inform the receptive intellect, having activated the object for it.

This interpretation, which places the notion of abstraction in center stage, as it were, would require the subject's own active intellect to be at work in every case of thinking. On this point Aquinas is quite clear: there are simply no intelligible objects for the receptive intellect to contemplate prior to the abstractive activity of the active intellect. Part of the difficulty in understanding and defending Aquinas' position, however, has been to adequately distinguish this abstractive activity from the distinctive activity of the receptive intellect. Indeed, given the receptive intellect is by nature receptive of universals, it might seem unnecessary to posit an active or poetic intellect that merely makes universals for it to receive: if the receptive intellect is already capable of contemplating universals, then a vanishingly small place remains for the active intellect's abstractive role.⁵¹⁷ In contrast to this view, I have suggested that the active intellect plays a robust and substantive role in inquiry, directing perceptual engagement and acting upon potentially intelligible objects. Its role is not merely to abstract intelligibles from individuating or material conditions, thus making them to be logically universal, but also to make them more and more suitable material in which knowers can discover and eventually contemplate the *correct* intelligible form. The active intellect, on my view, directs a process of conforming our intellectual concepts to experience, gradually improving the generalizations that the receptive intellect draws on the basis of gradually more revealing perceptual *gnōseis*. This much seems to be in tension with how Aquinas is usually understood: in short, while I place the active intellect's distinctive role in inductive process understood robustly, Aquinas (on these interpretations of him) sees the active intellect's role as effecting every case of induction, both good and bad.⁵¹⁸

⁵¹⁷ Here, again, recall Johansen (2012)'s representative skepticism that there is such a role for the active intellect to play. I agree with his criticism on this point. I do not follow him in criticizing *Aquinas*, however, since I am suspicious that his conception of "abstraction" is far closer to my thick conception of "induction" than the empiricist-abstractionists would have us believe.

⁵¹⁸ I have entertained a thought, *pace* Cory (2015), that I cannot elaborate on here: perhaps it is not *immateriality* that is most relevant about universals and of which the active intellect is most productive, but rather the explanatory character of *logoi*.

So if the dominant tradition of understanding Aquinas is correct, my view would be in tension with his. But interpreting Aquinas is not my concern here.⁵¹⁹ And I am not the first to question the received view of Aquinas' account of abstraction: Peter Geach in *Mental Acts* briefly calls into question the idea that Aquinas' view is straightforwardly abstractionist, at least in his sense of the term. I would like to set aside the question of whether Geach or the dominant interpretive tradition has gotten Aquinas right. Indeed, Geach says little more than this: Aquinas' gloss on Aristotle's Light Analogy commits him to something more interesting and more proximate to Geach's own view, rather than to simple abstractionism. About what it amounts to, Geach says very little, at least as a matter of interpreting Aquinas.⁵²⁰ I am more interested in Geach's substantive view *vis à vis* abstraction and how it relates to my understanding of Aristotle.

Geach rejects the idea that our concepts are developed by abstraction from what we find in perception, as if the contents of our concepts are straightforwardly determined by some relevant feature in perception. He describes his target:

I shall use "abstractionism" as a name for the doctrine that a concept is acquired by a process of singling out in attention some one feature given in direct experience—*abstracting* it—and ignoring the other features simultaneously given—*abstracting from* them. The abstractionist would wish to maintain that all acts of judgment are to be accounted for as exercises of concepts got by abstraction.⁵²¹

Briefly, his objection: in order to know which feature to abstract from perception, one must already be deploying the relevant concept or system of concepts one purports to extract. So, what is to be abstracted from perception cannot be *given* to knowers without the operation of any conceptual content or capacities: the abstractionist picture is self-defeating.⁵²²

⁵¹⁹ That project is especially difficult given that there is some indication, at least in Geach's mind, that Aquinas' view differs in precisely these details in the *ST*, the Aristotelian commentaries, and the *Quaestiones de Anima*; he points to *ST* as Aquinas' mature position on the issue.

⁵²⁰ See the appendix to Geach (1971): the discussion is compressed, but Geach takes it that colors must be kindled, that is to say, created by the action of the light. Aside from difficulties of interpreting precisely what Aquinas thinks, there are added difficulties in evaluating whether Geach got Aquinas right. But these difficult issues, while clearly relevant to the present inquiry, must be set aside.

⁵²¹ Geach (1971) §6, p. 18.

⁵²² See also Sellars, *Empiricism and the Philosophy of Mind* (1997) and McDowell *Mind and World* (1996).

Geach opts instead for a picture by which our concepts are *made*, and indeed made to *conform* to our perceptual experience with increasing accuracy. He writes:

Having a concept never means being able to recognize some feature we have found in direct experience; the mind *makes* concepts, and this concept-formation and the subsequent use of the concepts formed never is a mere recognition or finding; but this does not in the least prevent us from applying concepts in our sense experience and knowing sometimes that we apply them rightly. In all cases it is a matter of fitting a concept to my experience, not of picking out the feature I am interested in from among other features given simultaneously.⁵²³

Here Geach raises an important contrast between two ways of understanding concept formation. On the one hand, concepts are formed by “a mere recognition or finding,” so that priority is given to the perceptual experience and intelligible content simply flows into the mind once it has been found or recognized. On the other hand, the mind makes concepts that are adequate to what is present in perceptual experience. In the latter case, concept formation is a conforming of our mind to the world.

I find Aristotle’s conception of the active intellect to match quite naturally the conforming role that Geach proposes and finds in Aquinas’ account. And given what Geach says about Aquinas in the appendix, we can reasonably conclude that this is his reading of Aquinas’ active intellect. Geach does not, however, go on to describe in detail the gradual and sometimes difficult process of coming to refine one’s concepts in order to fit one’s experience more and more closely. For him, and for his Aquinas, the active intellect makes concepts or intelligible objects *simpliciter*, and that complex process is a detail lying somewhere downstream of the important point reorienting our entire approach to concept acquisition. Moreover, he even disparages the language of “finding” or “recognition,” language that fits quite naturally into Aristotle’s account. Accordingly, the role that Geach (along with his version of Aquinas) attributes to the active intellect can resemble painting the world with color rather than revealing color which is already there. This view has been entertained by those who identify the active intellect with the divine mind, a view discussed in earlier sections.

My concern is that Geach, in his anti-abstractionist crusade, has gone too far in the other direction; I am unsure whether his account can make sense of the idea that, for Aristotle and Aquinas alike, the active intellect activates *potentially intelligible* objects rather than making the

⁵²³ Geach (1971) §11, p. 40.

intelligible object *simpliciter*. On my view, in contrast, the active intellect does make intelligibility, but by directing the gradual process of fitting one's *logoi* to one's perceptual experience, gradually achieving in perception the correct grasp of particulars so that one can achieve in *nous* the correct universals, the *orthoï logoi*. While I find Geach's remark above extremely helpful, that the mind fits its concepts to experience, I worry that on balance his rhetoric goes too far in the other direction. We must hold both ideas in tension, that the active intellect *makes* intelligible objects and that it *activates* the potential intelligibility of objects already there. By understanding its distinctive role neither as straightforwardly abstractive nor as straightforwardly productive, but rather as *inquisitive*, we are better situated to explain Aristotle's condensed remarks, and to understand how perception and intellect relate quite generally.

5.7 KNOWING THE PLACE FOR THE FIRST TIME (OR, TO MAKE AN END IS TO MAKE A BEGINNING)

I have argued in this dissertation that Aristotle posits the active intellect to serve an epistemological need, not to explain the activities of the theoretical intellect in general but to explain how we come to possess the *correct* theories. I should like to say, in view of the preceding arguments, that we can now return to the text of *de Anima* III.5 and know the place for the first time. I am, however, under no delusions about the likelihood of that outcome. Much of what I have put forward in these pages is controversial and perhaps even programmatic, as I work out a new conception of the active intellect and of various issues in Aristotle's epistemology. Accordingly, I will be content if this dissertation accomplished a much more modest aim, that we may now return to the text of *de Anima* III.5 and see it from a new (though perhaps not wholly unproblematic) angle, with a fresh perspective and an alternative set of answers. To be sure, this new perspective raises a new set of questions, objections, and other considerations, but this is perhaps to be expected. As we have seen, the process of inquiry and discovery is an intellectually-driven process throughout which we entertain and evaluate new perspectives, in hopes of eventually arriving at the correct view. So, although the correct view in this case may as yet remain not known, it will not be because it was not looked for. After all, to make an end is to make a beginning: the end is where we start from.

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