

## **Book Proposal**

**Title:** *Knowing and Coming to Know: Essays on Aristotle's Epistemology*

**Type:** Collection of Essays

**Editor:** Gregory Salmieri

**Contributing authors:** James Allen, Robert Bolton, David Bronstein, Patrick Byrne, David Charles, Alan Code, Mary Louise Gill, James Lennox, Benjamin Morison, Michail Peramatzis, Gregory Salmieri, Joel Yurdin

**Length:** 130k words

## **Introduction**

The proposed book is a collection of essays addressing themes in Aristotle's corpus that fall within the field that we now call epistemology. Most of the essays originate from two workshops that I co-organized with James Lennox (one at the University of North Carolina, Chapel Hill in 2011 and one at the University of Pittsburgh in 2012) and another that I organized myself (in Cambridge, Massachusetts in 2013). To my knowledge there is no book in print on Aristotle's theory of knowledge as such, though there are a number of books on related areas (e.g. philosophy of science or of language), and there are a number of scholars who have been addressing aspects of this topic in articles or as parts of books on other subjects. Moreover, in addition to the three workshops just mentioned, there has been at least one panel on Aristotle's epistemology on the main program of an American Philosophical Association conference, and a workshop on an aspect of it in October 2013 at Rutgers University (organized by Rob Bolton and the late Allan Gotthelf). This is an area of intensifying research, and the time is right for a multi-author volume collecting the thoughts of some of the leading scholars in the field. That is what this book aims to be.

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## Synopsis

The book consists of an introduction and twelve essays, none of which have been published elsewhere. Abstracts of the essays by their authors are included below, but I will here discuss them more selectively in a way that focuses on common themes running through the essays that make them cohere well together into a book.

The first essay, by Mary Louise Gill, catalogues the various "intellectual virtues" and related cognitive states, thus providing an (opinionated) overview of much of the terrain that is covered in subsequent papers.

The next three essays, respectively by Michail Peramatzis, Benjamin Morsison, and Joel Yurdin, focus on *Posterior Analytics* I.33, a crucial chapter for Aristotle's theory of knowledge that has not yet received as much attention as it deserves. In it, Aristotle considers whether knowledge (*epistēmē*) and opinion (*doxa*) have the same objects. The three essays are related, having grown out of exchanges between the writers at the workshops that formed the basis of the proposed volume. Each author takes the chapter as a focal text through which to explore broad questions about Aristotle's theory of knowledge and its relation to other (contemporary and historical figures).

The next three essays deal in different ways with questions about justification or warrant. My essay discuss the several varieties of knowledge (*gnōsis*) Aristotle speaks of and the different ways in which recognizably justificatory concerns arise in his corpus in connection with several of them. I focus especially on Aristotle's interest in justifying terms and definitions, and on the presence or absence of methodology in the formation of different sorts of knowledge and in its status as knowledge (of one sort or other).

Robert Bolton's essay focuses on *Posterior Analytics* II.19, in which Aristotle discusses the process by which we come to know (from earlier perceptual knowledge) the principles from which other knowledge is demonstrated. As many have pointed out, the process he describes seems to be largely psychological rather than intellectual, and most scholars have thought that the chapter does not show a concern with justification or warrant as such. Accordingly, those

scholars who think of these demonstrations as justifying their conclusions interpret Aristotle as a rationalist, because they think of the principles as unjustified justifiers that derive from earlier knowledge causally, but not logically. Other scholars, who think of demonstrations as explaining rather than justifying their conclusions don't find any epistemology at all in II.19 or indeed in the *Posterior Analytics* as a whole. Bolton argues that the non-intellectual, psychological processes described in II.19 do not result in knowledge of the principles themselves, but empirical knowledge of explananda. The principles are then inferred as the best explanations. The explananda get their initial warrant from the reliable natural processes by which they were formed, they supply warrant to the principles, and the warrant of the explananda is increased when they are demonstrated from the principles.

David Charles' essay responds to Bas van Fraassen's critique of Aristotle's philosophy of science. Central to this criticism is the claim that an Aristotelian scientist could not be justified in believing in the reality of the principles postulated by his theory, because empirically adequate alternative theories are always available. In defending the Aristotelian scientist from this criticism, Charles is arguing that the principles of science are rationally grounded in prior knowledge. Bolton and Charles' accounts of grounding differ considerably, in no small part because they rely on very different views of experience (*empeiria*), the penultimate stage of the progression described in *Posterior Analytics* II.19 (and *Metaphysics* A.1).

Each of the three papers just discussed gives attention to the epistemological significance of the methods by which Aristotle thinks that knowledge or science (*epistēmē*) comes to be (ultimately) from sense-perception. Each of the remaining essays deals in greater depth with one or more of the methods that figure in the (later) stages of this process. David Bronstein's essay deals with the process of inquiry as a whole, and offers an alternative against both the rationalist interpretation of Aristotle's epistemology (discussed by Bolton) and the "explanationist" interpretation of our knowledge of principles (which Bolton and Charles, in different ways, share). Patrick Byrne discusses the method of analysis (for which the *Analytics* is named) and its role in the coming to be of *epistēmē*. In doing this he provides another perspective on the processes discussed by Bolton, Charles and Bronstein and on the idea of proving definitions, which is a focus of my piece. James Allen discusses the method of dialectic, which Aristotle says is at least sometimes part of the process by which we reach principles. The essay sheds light on the question of how dialectic lends support to its conclusions, and it picks up on the theme (introduced in earlier essays) of the respective roles of methodical and natural processes in cognition.

The final two essays, by James Lennox and Alan Code, respectively, return to the subject of how principles are established. Both authors treat the topic in light of the position (put forth by Lennox in a recent paper) that, though Aristotle doesn't articulate many general norms for the establishment of principles, within works on specific sciences, he articulates and follows specific norms by which one can inquire into and establish theories within that science. Lennox's essay deals with the norms Aristotle appeals to in *On Respiration* when criticizing his predecessors' theories of breathing, and Lennox shows the role of these same norms in the process by which Aristotle reaches his own theory. In the next essay, Code argues that Aristotle's inquiry into sleep in *De Somno* follows the norms laid out in *Parts of Animals* I. In discussing sleep and its definition, Code revisits issues about the establishment of definitions and principles discussed in several of the earlier essays.

## Timeline

I have complete drafts in hand of ten of the twelve essays; about half of these have been through a round of revisions and require only minimal further editing. I do not want to press the remaining authors to make revisions until I have secured a publisher for the volume. However, based on discussions with them, I expect to be able to deliver a completed typescript within six months of signing a contract.

## Abstracts of Essays

### “Aristotle on the Intellectual Virtues,” Mary Louise Gill (Brown)

In *Nichomachean Ethics* Book VI, Aristotle classifies and defines a variety of intellectual virtues: expertise (*technē*), knowledge (*epistēmē*), perception of starting points (*nous*, *aisthēsis*), wisdom (*sophia*), and practical wisdom (*phronēsis*). This paper engages in topography: charting the similarities, differences, and interrelations among these virtues (all types of intellectual competence exercised in particular acts of knowing) and their difference from the virtues of character (such as courage and temperance) and from lesser intellectual competences, such as experience and belief (*empeiria*, *doxa*). The paper then focuses on wisdom (theoretical knowledge, which combines *epistēmē* and *nous* and reasons from invariable starting-points) and *phronēsis* (practical wisdom reasoning from variable starting-points). Both types of competence grasp their starting-points by a sort of perception (called *nous* especially in the first case but also in the second). What difference does the invariability/variability of starting-points make to the two sorts of competence? And what is it to grasp both kinds of starting-points by a sort of perception? In answering these questions I will also discuss *Posterior Analytics* II.19 and *Metaphysics* A.1.

### “Aristotle on Knowledge and Belief: Posterior Analytics A.33,” Michail Peramatzis (Oxford)

This essay asks whether and, if so, in what way the objects of true belief and knowledge could be the same. Aristotle comes to grips with this problem in *Posterior Analytics* I.33. Before him, Plato in the *Republic* develops some views which have been taken to support what is called a ‘two-world’ theory of knowledge, in which knowledge ranges over Platonic Forms alone, while belief is only of non-Forms. As has been argued, it is not necessary to interpret Plato as subscribing to anything like this theory. There is a tendency, however, to think that Aristotle faces more severe problems than Plato does. For he seems to maintain that knowledge is of necessary items alone, whereas belief is of contingent items alone. If so, his view seems to entail some version of the two-world theory of knowledge. I shall point out two crucial weaknesses of this construal, and shall seek to set out a more plausible and defensible Aristotelian position. The first weakness is that necessity is taken as basic or unanalyzed. I shall offer a different understanding of the type of necessity involved in knowledge, the one that belief fails to grasp. I shall suggest that for Aristotle the necessity known is essence-based and derivative. It is not primitive, merely logical or knowable *a priori*. The second weakness concerns the centrality that is usually ascribed by interpreters to the features of factiveness or truth-entailment in characterizing Aristotelian knowledge. My objection is that we cannot understand knowledge

only or primarily on the basis of these features; for they are not even proper to knowledge alone. Even *true* belief, although perhaps not a natural or unified mental state, is nevertheless truth-entailing.

The difference between true belief and knowledge, and the question of why knowledge is normally taken as more valuable than merely true belief are central problems in Plato's *Meno* (96d5-98b5). In my view, Aristotle too addresses these problems in a constructive way in *Posterior Analytics* I.33, and, just as Plato, takes explanation to be a far better notion than factiveness is for grounding the higher value of knowledge in comparison with merely true belief. I shall argue that true belief could have as its objects even the sort of *necessary* propositions that Aristotelian knowledge paradigmatically ranges over. What the objects of true belief lack if compared with knowledge, however, is the grasp of the explanation of why *x* necessarily is *F*. In having a belief or even a true belief about *x*, the believer or true believer either does not grasp at all any essence of *x* in virtue of which it necessarily is *F*, or grasps *x* as being essentially other than what it really is. In some (admittedly more peculiar) cases the true believer may even have some type of epistemic access to the essence but fail to grasp it *as the explanatory essence* of the item known. If Aristotle's view about the possible ways in which true belief and knowledge might have the same object could be condensed in a single aphorism, this would be: 'same' thing, 'same' proposition, even 'same' modality, but different (non-essentialist and non-causal) grounds.

"Posterior Analytics I.33: what is understood and what is believed," Benjamin Morison (Princeton)

In *Posterior Analytics* I.33, Aristotle says that the objects of understanding and of opinion are in a way the same, and in a way different. Aristotle is trying to grapple with the question of whether an expert, when he *understands* that man is an animal, entertains the same thought as the non-expert when he *believes* that man is an animal. Aristotle's answer, characteristically, is that in a way the object is the same, and in a way it is not. My paper investigates how to understand Aristotle's claim.

I start with Gareth Evans' work on Frege on indexicals, especially Evans' insight that it doesn't much matter whether one describes the difference between me entertaining the proposition 'I am hungry' and you entertaining the proposition 'BM is hungry' as (1) a difference in the *way* we entertain the proposition 'BM is hungry' (I entertain it first-personally, you entertain it in some other way; Evans credits Perry with developing an approach such as this), or (2) a difference in the *proposition* entertained (I entertain a proposition one of whose constituents is the sense of 'I', you entertain a proposition which does not include that sense; Evans credits Frege with this approach). Either way, a special kind of authority attaches to my judgment that I am hungry, and it attaches to my judgment in part because of the special way I am presented to myself, a mode of presentation which is captured by my use of the word 'I', which makes it possible for me either (1) to judge a certain proposition in a way unavailable to anyone else, or (2) to judge a proposition whose content is unavailable to anyone else to judge.

Similarly, I want to argue, Aristotle thinks that a biologist (an expert on man and animals) can frame a proposition, such as the proposition that man is an animal, in a way that a non-expert cannot, because the expert has some sort of cognitive contact with the essence of man that the non-expert does not. Thought of like that, the expert and the non-expert entertain the same proposition, 'man is an animal', in two different ways (cf. (1) above). But Aristotle also, in

the same breath, cashes out the content of this judgment on the part of the expert as ‘man is in his nature (or: essentially) an animal’, a proposition which the non-expert cannot frame, because the non-expert is not in cognitive contact with the essence or nature of man, and so cannot form thoughts involving it. Thought of in this way, the expert and the non-expert do not entertain the same proposition (cf. (2) above). Hence Aristotle says that the expert and non-expert in a way entertain the same content, and in a way do not.

The analogy with Evans is supposed to shed light on why the expert’s judgment that man is an animal (like my judgment that I am hungry) is more authoritative than the non-expert’s and counts as knowledge: it is because of the special way in which man is presented to the expert (because the expert knows the essence of man). This will also explain why the propositions which are constitutive of a science, on Aristotle’s view, are not explicitly modalized, and yet in I.33, the content of the proposition which is said to be entertained by the expert is unpacked using modal vocabulary (or at least the vocabulary of essences).

“*Posterior Analytics* I.33 on the Objects of Understanding and Opinion: Reply to Morison,” Joel Yurdin (Haverford)

Morison argues that what is understandable differs from what is opinable with respect to what I shall call ‘essentiality content’: an understandable content says that *F*s are *G* in virtue of the essence of *F*; an opinable content says that *F*s are *G*, but denies that this is so because of the essence of *F*. This part of Morison’s interpretation seems to me correct, or nearly so. But we need not saddle Aristotle with the implausible view that only someone who understands a certain proposition can so much as entertain that proposition with its full-blown essentiality content. Both expert geometers and advanced geometry students can entertain a proposition with its full-blown essentiality content, even if, because they have not demonstrated it, they do not yet understand the proposition. The source of this implausible view is the assumption that everyone who lacks understanding of a proposition must be relegated to the class of opining with respect to that proposition. But Aristotle does not claim that these two states are exhaustive. He means to point out a difference between the sort of content cognized by those with understanding and the sort of content typical in everyday thought. He is not pointing out a difference between the content of understanding and that of every other cognitive state, including the kind held by scientists-in-training or experts who are considering a result that they have not yet demonstrated.

“In Search of Aristotelian Epistemology: Justification and the Varieties of Knowledge,” Gregory Salmieri (Boston University)

Epistemology is often defined as the study of knowledge and the justification of beliefs. In this essay I discuss Aristotle’s conception of knowledge and the extent to which we can find in his corpus a concern with something that we can recognize as epistemic justification. I argue that “*gnōsis*,” the most general of the Aristotelian terms that might be translated “knowledge,” denotes not a species of belief, differentiated from others by such factors as truth and justification, but is a very broad term for an awareness of a fact. The term includes awarenesses that are held in the form of beliefs, but also ones that are not (such as perceptual acquaintance). Other Aristotelian knowledge words denote types of *gnōsis* — *gnōsis* of different sorts of objects by different sorts of faculties. Some forms of *gnōsis* correspond directly to false cognitions of similar content. Others, and in particular our *gnōsis* of scientific principles, are such that there is

no corresponding form of falsity. Moreover, some sorts of *gnōsis* are formed automatically whereas others are or can be formed (or completed) by deliberate methodical inquiry. I go on to discuss the different sorts of justificatory concerns that arise for each sort of *gnōsis*, with special attention to the justification of principles. In particular I focus on the question of how one can tell whether what one knows (or thinks one knows) is in fact a principle, and in what way definitions (as a type of principle) are susceptible to proof. In showing that these issues are of active concern to Aristotle, I show that he is interested in something that we can recognize as epistemic justification, though his way of understanding the issues is quite different from those familiar from contemporary epistemology.

“Epistemology and Psychology in Aristotle’s *Posterior Analytics* II.19,” Robert Bolton (Rutgers)

The *Posterior Analytics* in general and II.19 in particular are usually regarded as either endorsing a highly rationalistic epistemology or no epistemology at all. This paper argues, by contrast, that the *Analytics* presents a non-rationalistic epistemology, in which II.19 plays a crucial role. According to I.2, the conclusions of demonstrations acquire their status as known by transference from the demonstrative principles. Book II of the *Posterior Analytics* describes an inductive process by which these principles are established. Like the truths demonstrated from them, they gain their credibility and status as known by transference from premises that are already known. In particular, the principles are grasped by inference to the best causal explanation, and for such inferences to yield knowledge, one must already have knowledge about the explananda. II.19 is Aristotle’s account of how we arrive at this knowledge of the explananda. By contrast with our knowledge of principles and of the conclusions demonstrated from them, the knowledge of the explananda is not reached intellectually. Rather, it is a product of the normal and reliable functioning of our perceptual faculties. This is the lesson of II.19’s genetic psychological account of knowledge acquisition. Such an account is appropriate and essential for Aristotle’s externalist or natural reliabilist view of our basic empirical knowledge. But it is only this empirical knowledge that II.19 is meant to explain, not our knowledge of the principles themselves, which is inferred from this basic empirical knowledge in the manner described in the earlier chapters of Book II.

“Aristotle’s Philosophy of Science Re-Examined,” David Charles (Oxford)

In this essay, I discuss certain aspects of Aristotle’s views on essence and explanation, taking as my starting point an article by Bas van Fraassen written in 1980 entitled ‘A Re-examination of Aristotle’s Philosophy of Science’. My aim is to examine how far van Fraassen’s objections to Aristotle’s views are well placed and to see where they are mistaken.

Van Fraassen’s first objection runs as follows. It may be necessary that the planets that are near don’t twinkle, but also necessary if they don’t twinkle that they’re near. Aristotle has to show why one of those facts is essential to the phenomenon in question and not merely a necessary addition. This, van Fraassen claims, Aristotle was incapable of doing.

Van Fraassen’s second objection runs as follows. “I grant that you may if you choose introduce a concept of essence or nature and modify your practices of definition and explanation so as to find such natures. Maybe if you do so, you will get an intelligible picture of how the world is. But the conception which you introduce is a highly theoretical one, which you yourself imposed on the data of the evidence before you. The evidence could equally well be handled

without introducing deep metaphysical notions of this type. Even if this way of seeing things makes the world intelligible, that intelligibility is a result of our own theoretical imposition onto data, which needn't be understood in this way. After all, the world may not be intelligible in the way in which you're considering."

In this essay I consider the extent to which Aristotle is vulnerable to van Fraassen's two objections.

"The Order of Inquiry in *Posterior Analytics* II," David Bronstein (Georgetown)

I argue that in *Posterior Analytics* II Aristotle is committed to what I call the Socratic Picture of the order of inquiry, according to which we should first seek what the essence of a subject kind is (after establishing the kind's existence) and then seek its other necessary attributes (including their causes). In doing so I argue against two rival interpretations of Aristotle's account: what I call the Intuitionist and Explanationist Pictures. Part of my aim is to show that *Posterior Analytics* II contains all the elements of a *grand theory of inquiry*, one that explains not only our acquisition of isolated bits of local knowledge but also our acquisition of knowledge of a science as a whole, including noetic knowledge of its definitional first principles

"The Method of Analysis in Aristotle's *Analytics*," Patrick Byrne (Boston College)

This paper explores the method of inquiry that Aristotle proposes in his *Analytics*. Inquiry is one of the central preoccupations of the *Analytics*. One of the main objectives of the *Prior Analytics* is to "prove the problem" – that is, to answer the question, "How can this proposition be proven?" Again, in the *Posterior Analytics* Aristotle states his acute observation concerning the connections between four distinguishable types of questions raised by scientific investigators, and the corresponding forms of scientific knowing that provide the precise answers to each. The objective of scientific questions is discovery of the middle term, around which a scientific demonstration can be constructed. The middle term states the cause, the *to dioti* (reason why) of the connection between predicate and subject terms of the conclusion of the demonstration. This paper traces the methods that Aristotle sets forth in both the *Prior* and the *Posterior Analytics* that facilitate the discovery of new middle terms and first principles in the course of scientific investigations. In particular, the paper shows how Aristotle extrapolated his method of analysis from its original use – namely, finding solutions to geometrical problems as developed by ancient Greek mathematicians. Aristotle took this model of analysis and extended it to a broader use, that of analyzing the more general field of scientific and philosophical problems.

"Aristotle's dialectic through the optic of the *Rhetoric*," James Allen (University of Pittsburgh)

In his treatise on rhetoric, Aristotle aims to perform something of a balancing act. On the one hand, he takes an exceptionally dim view of his predecessors and contemporaries in the field of rhetorical theory. To his way of thinking, they have wasted their time on matters that are at best of secondary importance, above all manipulating the emotions of the orator's audiences. At the same time, he wants to defend rhetoric—as it can and should be—from attacks like those familiar from Plato's *Gorgias*, which if successful would leave no room for a genuine art of rhetoric at all or, just as bad, would do so at the expense of transforming rhetoric—true

rhetoric—into something indistinguishable from philosophy or philosophical politics. The charge against rhetoric to which he pays the most attention is that it has no special object, subject matter or domain of its own. It equips its students with a persuasive facility that can be applied to subjects about which they are completely ignorant and it lends itself equally well to argument for true and false conclusions and the service of just and unjust causes. Aristotle's defense is that the features that are the basis of this reproach against rhetoric are ones it shares with the—reputable—discipline of dialectic, which likewise has no subject matter of its own and equips its practitioners with an argumentative facility that is independent of substantive knowledge of the issues it tackles, and which can be deployed on either side of any question to which it is applied. Borrowing language from the *Gorgias*, he dubs rhetoric the counterpart of dialectic. Programmatic remarks about the nature and value of dialectic, if not altogether nonexistent in the *Topics*, Aristotle's manual of dialectic, are notoriously thin on the ground there. In the course of defending rhetoric by likening it to dialectic, however, Aristotle has much to say about dialectic itself. The object of this essay will be to draw on this material for the light it can throw on dialectic. I'll be particularly concerned with what Aristotle has to say about how dialectic provides essential assistance to human beings' natural affinity for truth (1355a14 ff.) and the mysterious distinction between a kind (form, mode of argument) appropriate to dialectic, and rhetoric to the extent that it participates in the character of dialectic, and one proper to the special sciences (1358a2 ff.).

"Why Do We Breathe? Aristotle on Norms for Teleological Inquiry," James Lennox (Pittsburgh)

As Aristotle details in the first seven chapters of *On Respiration*, a number of his predecessors had presented theories about breathing—and all of them, in Aristotle's view, had gone seriously astray. In this paper I focus not on *what* he thinks they got wrong, but on what Aristotle has to say about *why* they went wrong, and what they *ought* to have done to keep their inquiries on track. We will use this topic as a vehicle for exploring the norms Aristotle defends for inquiry into organic processes, and more generally his views about norms of scientific inquiry. In the process I challenge a number of misconceptions about Aristotle's philosophy of science and his scientific practice.

"Locality of Norms and the Causes of Sleep," Alan Code (Stanford)

Some of the attributes of a kind have causes that are distinctive of just that kind, whereas others have their causes at some higher level of generality. Of those common attributes, Aristotle distinguishes those that are undifferentiated from those that are differentiated 'according to form.' He gives sleep as an example of the former since it is formally the same in humans, dogs, horses and the like. By contrast, locomotion is a common attribute that is differentiated 'according to form.' Although it is common to many different animal types, it occurs in a variety of different forms. Against the background of this distinction in *Parts of Animals* I.1 raises a question about whether one ought to proceed by first discussing features that are common to kinds, and subsequently move to an investigation of features that are unique to its sub-kinds. This paper explores the way in which Aristotle investigates the causes of sleep in his *De Somno*. The causal account of sleep is the same for all blooded animals, but also is analogously the same for all animals. Even though the causes of sleep in insects differ from the causes sleep in blooded animals, in each case the explanation involves a set of parts and functions in the one kind of

animal that correspond analogously to the same number of parts and functions in the other kind in such a way that the entire causal story is itself analogously the same for both.