



# THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

# Collection and Division in Plato's Dialogues

Anthony Pasqualoni

Doctor of Philosophy

The University of Edinburgh

2015

## Abstract

Plato describes a way of reasoning that comprises two complementary operations, collection and division. Collection unifies many into one while division divides one into many. In other words, while collection brings together many parts into a whole, division divides a whole into many parts. While Plato goes into some detail in his observations on collection and division, several questions remain unanswered. More specifically, the means by which collection and division operate, their product, and their relation to deductive and non-deductive reasoning are uncertain. The purpose of this study is to shed light on collection and division by defending the following thesis: collection and division define logical frameworks that underlie both deductive and non-deductive reasoning.

Chapter 1 will introduce collection and division by reviewing recent literature, defining key terms, and discussing illustrations of collection and division in the dialogues. Chapter 2 will explain how collection and division define logical frameworks through three operations: *seeing*, *naming*, and *placing*. These operations will be discussed in terms of their relations to reasoning about wholes and parts. Chapter 3 will present four models for interpreting the logical structures that are produced by collection and division. It will present the argument that collection and division define non-hierarchical structures of overlapping parts. Chapter 4 will present the argument that collection and division define whole-part relations that underlie deductive reasoning on the one hand, and the formulation of definitions in dialogues such as the *Sophist* and the *Statesman* on the other. Chapter 5 will explore the relation between collection and division and non-deductive reasoning. It will present the argument that Meno's definition of virtue and Euthyphro's definition of piety are formulated using collection and division. Chapter 6 will provide a

summary of key points from the preceding chapters and discuss unanswered questions and avenues for future research.

## **Acknowledgements**

I would like to thank the following for their help and encouragement: Amber Carpenter, Yi-Kyong Chung, Yinlin Guan, Niels Hermannsson, Jeff Johns, Kostas Kravaritis, Inna Kupreeva, Dana Miller, Juan Pablo Mira, Carl Ploss, Paul Schweizer, Simon Trépanier, and Miira Tuominen. Thanks also go to my parents and to my teachers and mentors at the New Haven Zen Center and Sacred Heart University. I would also like to thank The University of Edinburgh for providing financial support through the Global Overseas Research Scholarship and for funding provided by PPLS.

**Declaration**

I declare that this is my own work and that it has not been submitted for another degree or professional qualification.

Anthony Pasqualoni, July 13, 2016

## TABLE OF CONTENTS

Chapter 1 .....	11
1.1 Introduction.....	11
1.2 Four illustrations of collection and division .....	20
1.2.1 Collection and division in the <i>Phaedrus</i> .....	21
1.2.2 Collection and division in the <i>Sophist</i> .....	26
1.2.3 Collection and division in the <i>Statesman</i> .....	33
1.2.4 Collection and division in the <i>Philebus</i> .....	38
1.2.5 Comparison .....	41
1.3 Three operations of collection and division: <i>seeing, naming, and placing</i> .....	42
1.3.1 <i>Statesman</i> 285a4-285b6 (Appendix A 44).....	43
1.3.2 <i>Statesman</i> 260d11-261a9 (Appendix A 21).....	44
1.3.3 <i>Sophist</i> 235c8-235d5 (Appendix A 13) .....	45
1.3.4 Conclusion .....	47
1.4 Literature Review.....	49
1.4.1 Scope and purpose of collection and division.....	50
1.4.2 Relation between collection and division and dialectic .....	52
1.4.3 The Role of collection.....	54
1.4.4 Relation to genus-species hierarchies .....	56
1.4.5 Criticisms of the method of collection and division .....	62
1.4.6 Conclusion .....	65

1.5 Terminology.....	65
1.5.1 ‘λόγος’ .....	66
1.5.2 ‘μέθοδος’ and ‘ὁδός’ .....	71
1.5.3 ‘logic’ and ‘framework’ .....	74
1.6 Origin, purpose, and scope of collection and division.....	83
1.6.1 Origin .....	83
1.6.2 Purpose.....	85
1.6.3 Scope.....	88
1.7 Conclusion .....	94
Chapter 2.....	97
2.1 Introduction.....	97
2.2 Three operations: <i>seeing, naming, and placing</i> .....	98
2.2.1 Seeing.....	103
2.2.1.1 Seeing and reasoning .....	104
2.2.1.2 Seeing and collection and division.....	105
2.2.1.3 Limit to the analysis of seeing .....	110
2.2.1.4 Conclusion .....	112
2.2.2 Naming.....	114
2.2.2.1 Names have a wide scope in the dialogues.....	114
2.2.2.2 Naming as an operation of collection and division.....	116
2.2.2.3 Conclusion .....	121
2.2.3 Placing.....	122
2.2.3.1 Placement of parts relative to a whole .....	125



2.2.3.2 Placing the target to be defined into a part ..... 128

2.2.3.3 Conclusion ..... 129

2.2.4 Seeing, naming, and placing as steps of reasoning ..... 129

2.3 Reasoning and images..... 134

2.3.1 Three levels of reasoning: sensible images, imagination, and pure reason ... 135

2.3.2 Images are necessary for reasoning ..... 139

2.3.3 Images and truthfulness ..... 141

2.4 Two senses of the word ‘method’ ..... 147

2.5 Collection and division and the unlimited ..... 152

2.6 Conclusion ..... 155

Chapter 3..... 157

3.1 Introduction..... 157

3.2 Four models: Tree, Fabric, Lens, and Mesh ..... 158

3.2.1 Tree ..... 159

3.2.2 Fabric ..... 162

3.2.3 Lens ..... 167

3.2.4 Mesh..... 170

3.2.5 Conclusion ..... 173

3.3 Two Perspectives on a Framework..... 180

3.4 Conclusion ..... 184

Chapter 4..... 187

4.1 Introduction..... 187

4.2 Deductive reasoning and collection and division ..... 188

4.3 Hypothesis: collection and division are not the basis of deductive reasoning.....	189
4.3.1 The syllogistic is distinguished by the use of variables .....	190
4.3.2 The syllogistic is distinguished by logical consequence.....	192
4.4 Hypothesis: collection and division are the basis of deductive reasoning.....	195
4.4.1 Similarities between the syllogism and collection and division .....	195
4.4.2 Collection and division define structures that underlie deductive reasoning	204
4.4.3 Mereological formalizations.....	204
4.4.3.1 Mereology compared with set theory.....	215
4.4.3.2 Axioms and definitions .....	218
4.4.3.3 Deductions of the first figure .....	219
4.4.3.4 Formalization of structures defined in the <i>Sophist</i> and the <i>Statesman</i> .....	225
4.5 Conclusion .....	239
Chapter 5.....	241
5.1 Introduction.....	241
5.2 Definitions compared to lists .....	242
5.3 The <i>Meno</i> .....	246
5.3.1 Hypothesis: Meno’s definition of virtue does not derive from collection and division.....	248
5.3.2 Hypothesis: Meno’s definition of virtue derives from collection and division.....	250
5.4 The <i>Euthyphro</i> .....	254
5.4.1 Hypothesis: Euthyphro’s definition of piety does not derive from collection and division.....	256

5.4.2 Hypothesis: Euthyphro’s definition of piety derives from collection and  
division..... 258

5.5 Conclusion ..... 266

Chapter 6..... 269

6.1 Introduction..... 269

6.2 Summary..... 270

6.3 Avenues for future research ..... 273

6.3.1 Criteria for evaluating images..... 273

6.3.2 Belief, knowledge, and individuals..... 275

6.3.3 Further analysis of the three operations ..... 278

6.4 Conclusion ..... 281

Works Cited ..... 283

APPENDIX A:..... 293

APPENDIX B: ..... 321

## Chapter 1

### Introduction

#### 1.1 Introduction

In his dialogues Plato illustrates a form of reasoning that comprises two complementary ways of thinking, collection and division. Collection and division are wide in scope: they give us the ability to speak and to think (*Phaedrus* 266b) and provide a means by which all the discoveries of the arts are made (*Philebus* 16c). They are illustrated extensively in the definitions of the *Sophist* and the *Statesman* and they are described as an ancient method of discovery in the *Philebus*. But the means by which they operate, their results, and their relation to other forms of reasoning are open to question. For example, do collection and division comprise a deductive method, or are they completely removed from such forms of reasoning as the syllogistic? What is their relation to non-deductive reasoning? This study will present the argument that collection and division define structures that serve as the basis for syllogistic inference as well as other forms of reasoning. In short, the purpose of this study is to shed light on collection and division by defending the following thesis: collection and division define logical frameworks that underlie both deductive and non-deductive reasoning.

The dialogues in which collection and division are most extensively discussed are the *Phaedrus*, *Sophist*, *Statesman*, and *Philebus*. In the *Philebus*, Socrates states that the method of collection and division is the way through which all the discoveries of the arts are made (“πάντα γὰρ ὅσα τέχνης ἐχόμενα ἀνηυρέθη πώποτε διὰ ταύτης φανερὰ γέγονε”

<sup>1</sup>; 16c). More importantly, he also states that collection and division give us the ability “to speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b), and in the *Sophist* it is stated that the method aims at “acquiring intelligence” (“κτῆσασθαι γὰρ ἔνεκα νοῦν”; 227b). These statements indicate that collection and division, like logic and reasoning in general, are very wide in scope, and it will be argued below that these dialogues show that collection and division are not confined to a particular domain such as psychology, mathematics or linguistics; rather, collection and division underlie and shape thinking in general.

This raises the question as to the relation between collection and division and logic. I will argue that the logical frameworks defined by collection and division are necessary for deductive reasoning. In other words, without whole-part relations defined by collection and division, deduction is not possible. In this sense, the mereological structures produced by collection and division provide a basis for deductive inference. However, while collection and division are necessary for deductive reasoning in the sense that they lay the groundwork upon which such reasoning moves, in and of themselves they are not sufficient for deductive reasoning. They facilitate the formulation of sound arguments but they do not provide all of the necessary components for valid deductive inference. This is also the case for non-deductive arguments: while the whole-part relations necessary to formulate a non-deductive argument are defined through collection and division, the argument itself is constructed through another way of reasoning such as, for example, the method of elenchus. Thus, by ‘logical framework’ is meant a structure of whole-part relations *through which* deductive and non-deductive argumentation

---

<sup>1</sup> Quotations of Plato in Greek are from J. Burnet, *Platonis opera*, vols. 1-4 (Oxford: Clarendon Press) via *Thesaurus Linguae Graecae* and print sources.

operates. In other words, a logical framework defined by collection and division is a *mereo*-logical framework, i.e., a set of interrelated parts that provides the basis for other forms of reasoning.<sup>2</sup>

When collection and division are referred to as a “method,” the term ‘method’ is being used in the ancient sense of ‘*μεθ-όδος*’ – i.e., a figurative route or road. Thus, in the context of collection and division, a method is a way by which reasoning makes its way to an endpoint such as a definition. In this sense, collection and division do not constitute a *logical method* in the modern sense of the term, i.e., as a rule-based procedure for constructing valid arguments. Rather, as will be argued below, collection and division constitute a *way of reasoning* that enables the reasoner to discern, articulate and order the parts of a whole.

To illustrate the ways in which collection and division operate, this work will focus on dialogues in which collection and division are explicitly described and illustrated: the *Phaedrus*, the *Sophist*, the *Statesman*, and the *Philebus*.<sup>3</sup> While some of the themes of the earlier dialogues overlap with the above dialogues, it is beyond the scope of this work to discuss them in detail. More specifically, topics such as the theory of Forms as described in the *Republic*, the method of hypothesis in the *Phaedo*, and arguments concerning teleology will not be discussed in detail. Rather, this work will focus on defending the claim that collection and division define frameworks that underlie deductive and non-deductive reasoning. Therefore, instead of discussing themes that play

---

<sup>2</sup> While a framework provides the necessary conditions under which a deductive argument can be constructed, in fact the reasoner may reason incorrectly and reach the wrong conclusion even in cases where a framework makes a valid deductive inference possible. This is discussed further in Section 1.3.4.

<sup>3</sup> However, as will be explained below, Chapter 5 is exceptional for the reason that its purpose is to show that collection and division, as a way of reasoning based on wholes and parts, are not limited to the dialogues in which Plato explicitly refers to them.

prominent roles in the earlier dialogues, I will discuss passages in the aforementioned dialogues that shed light on how these frameworks are constructed and their relationship to other forms of reasoning.

Dialectic is another topic that will not be discussed in detail.<sup>4</sup> In contradistinction to dialectic as described in the *Republic*, I will argue that collection and division in their elementary form constitute a way of reasoning that is more akin to the term ‘διαλέγεσθαι’ as it is employed in the definition of thinking (“διανοεῖσθαι”) at 189e-190a in the *Theaetetus*. In this passage, the term is employed to define thinking as a conversation of the soul with itself.<sup>5</sup> As a common form of reasoning, διαλέγεσθαι in this sense agrees with the claim made by Socrates that collection and division allow us “to speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b).

The intimate connection between collection and division on the one hand, and everyday thought and speech on the other, is one of the key aspects of collection and division that is explored in this work. Evidence of collection and division in the earlier dialogues complements their portrayal in the *Sophist* and the *Statesman* as a deliberately-applied procedure. The *Meno* and the *Euthyphro* were chosen in this regard for two reasons. First, as earlier dialogues in the Platonic corpus, they show that the driving force behind collection and division – the discernment, naming, and ordering of parts within a whole – is at work even in everyday reasoning. Clearly, neither *Meno* nor *Euthyphro* are practicing any particular procedure or “method” in the modern sense of the word when they initially formulate their definitions of virtue and piety, respectively, nor are they

---

<sup>4</sup> By ‘dialectic’ is meant the procedure for investigating Forms as described in Book VII of the *Republic*. In Section 1.4.2 below I argue along with commentators such as Ackrill that while the method of collection and division is closely associated with dialectic, it is not identical to it.

<sup>5</sup> *Theaetetus* 189e-190a is discussed further in Section 1.5.3 below.

philosophers who are trained in a particular way of reasoning. It is for these reasons that they make interesting test cases to determine if collection and division operate behind the scenes to allow them “to speak and to think” about virtue and piety in the midst of a conversation. In Chapter 5 I will argue that this is indeed the case; i.e., a specific way of reasoning – reasoning in terms of wholes and parts for the purpose of arriving at a definition – is at work even as Meno and Euthyphro formulate their definitions in response to Socrates’ questioning. Second, I chose these two dialogues because while they both parallel the method as it is illustrated in the *Phaedrus*, they also exhibit features of collection and division that are not apparent in other dialogues. In the case of the *Meno*, I will argue that Meno’s definition of virtue fails precisely because it is an incomplete application of collection and division. For this reason it is useful as a negative case that points out what is needed to fully develop a coherent definition using collection and division. In this sense, Meno’s description of virtue is not unlike the “scattered many” of the *Phaedrus* (265d; see Section 2.2.1.2) upon which collection and division operate, only in Meno’s case the process of bringing the nameless many into a coherent whole remains unfinished. The *Euthyphro*, on the other hand, is especially interesting because it shows that collection and division do not always focus on universals; i.e., they also operate on collections of individuals. For example, a human lineage can be seen as a whole in which the parts are members of a family. In fact, as I will argue in Section 5.4.2, the reasoning behind Euthyphro’s definition of piety parallels the division of love and madness in the *Phaedrus* in this respect. In short, the *Meno* and the *Euthyphro* are discussed because they resemble in key respects the illustrations of collection and division in other dialogues such as the *Phaedrus*, and because they illustrate how whole-



part reasoning underlies the formulation of definitions even in cases where a procedure is not being deliberately employed.

As stated above, the result of collection and division can be understood as a logical framework that underlies other forms of reasoning. This claim raises the question as to what is meant by the term ‘logic.’ In Section 1.5.3 (pg. 74) a working definition of logic will be presented: ‘logic’ is to be understood as a way of reasoning that is oriented toward a goal or endpoint. Given this definition, I will argue that collection and division constitute a basic form of logic. However, even if this is the case, the question remains as to whether there is any value in studying them aside from whatever light they may shed on Plato’s way of thinking. In the preface to *Truth, etc.: Six Lectures on Ancient Logic*, Jonathan Barnes states the following:

Most contemporary logicians have little interest in the history—or at least in the ancient history—of their subject. No doubt they suppose that their long-dead colleagues have little or nothing to teach them, and perhaps they prefer the present and the future to the past. If that is so, then it must be confessed that their supposition is quite true: no logician has anything to learn from a study of Aristotle; and the pages of this book make no contribution to logic or to philosophy (vi).

*If* Barnes’ claim that most contemporary logicians have little interest in the ancient history of logic is true, it simply raises the question as to whether contemporary logicians have anything to gain from the study of ancient logic. As for Barnes’ stronger claim that contemporary logicians have “nothing to learn” from “their long-dead colleagues,” logicians such as Graham Priest disagree. Far from dismissing logicians of the past as irrelevant, Priest emphasizes that significant discoveries have been forgotten over the centuries. At the Munich Center for Mathematical Philosophy Conference in 2012, he

stated that “things come and things go in the history of the logic that we teach.” (Priest, “Revising Logic”). Priest emphasized that “stuff gets forgotten ... with the rise of humanism in the 15<sup>th</sup>-16<sup>th</sup> century, the great advances in Medieval logic were all forgotten” (“Revising Logic”). He states that this was *not* a rational change; rather, scholasticism fell out of favor to be replaced by a kind of “bowdlerized form of traditional logic” that we see in Kant’s logic, for example (Priest, “Revising Logic”). Priest is not claiming that all changes are for sociological reasons, and real progress is made in some cases.<sup>6</sup> However, Priest is correct when he claims that important discoveries in logic are forgotten. A commonly-cited example is the logic of the Stoics, which had been largely forgotten over the centuries and then resurrected in the 20<sup>th</sup> century as propositional logic; scholars such as Josiah Gould state that in the Stoics’ theory of deduction “one finds an astonishing number of anticipations of work in modern logical theory” (166). Similarly, John Corcoran states that one “crucial” possibility is the following:

...the ancients had insights, perhaps even fairly well developed theories, which are substantially better than our own views on the same topics ... I think that we have a responsibility to make it impossible for future generations to say of us that, for example, had we understood the *Categories*, we would have been able to develop theories of semantics far superior to those that we are now developing. In other words, I think that we must look at the ancients with the hope of finding in them doctrines and ideas which would be substantial contributions to modern linguistics and logic (186-187).

Corcoran also states that “Attempts to understand ancient theories seem to force us to reconsider the fundamental and enduring questions concerning logic and language. As we all sadly know, successful technical advances have a tendency to engender trains of

---

<sup>6</sup> The advances made in mathematical logic in the 19<sup>th</sup> century serve as an example.

imitative variations which cloud fundamental issues” (187). These observations are a far cry from Barnes’ claim that contemporary logicians have little or nothing to learn from ancient logic. In my view, Priest, Gould, and Corcoran are correct; in general, the study of ancient logic is invaluable for recovering ideas and methods that have been forgotten or overlooked.

Ancient thought plays a prominent role in contemporary mathematics as well as logic, and some of the basic concepts that underlie collection and division are evident in both modern logic and mathematics. Cantor, the co-founder of set theory, drew his inspiration for the notion of a set from the idea of collection as described in the *Philebus*. Hauser states that there is a “substantive connection between Plato’s mature theory of ideas” and Cantor’s theory of sets (784). Cantor’s *Grundlagen einer allgemeinen Mannichfaltigkeitslehr*, published in 1883, employs concepts from the *Philebus* – ἄπειρον (unlimited), πέρας (limited), and μεικτόν (mixed) – to explain sets as collections, the latter of which are compared to the Platonic εἶδος (Hauser 785). Menzel argues similarly. In fact, the concept of μεικτόν was employed by Cantor to overcome a long-standing impediment to the study of infinity. Menzel states,

...in likening sets to the *meikta* of the *Philebus* Cantor was challenging an ancient, well-entrenched philosophical position which had associated, even identified, the infinite with the indeterminate. To the contrary ... Cantor showed that infinite sets are no less open to mathematical determination than finite sets, and are thus no less legitimate (97).

This is a good example of how ancient ideas can influence contemporary mathematics, and it is worth noting that the use of sets is widespread in mathematical logic. For example, the alphabet and logical connectives of a system of logic such as propositional

logic or first-order logic are typically defined as sets. While it is beyond the scope of this study to explore in-depth the relations between set theory, logic and Plato's writings, that there are such relations underscores the relevance of collection and division to modern thought.

In short, the importance of investigating the method of collection and division is three-fold. First, it will shed light on a good portion of Plato's later dialogues. Collection and division occupy center stage in the *Statesman* and the *Sophist*, and they play a prominent role in the *Philebus* and the *Phaedrus*. For Plato, collection and division are a means to attain clarity and truth in all areas of inquiry; as such, they constitute the means by which deep philosophical questions are explored in the later dialogues. Second, by formulating a definition of logic and determining the relation between logic and collection and division, we can gain a better understanding of the development of systems of deductive logic such as the syllogistic. This will be discussed primarily in Chapter 4, where it will be argued that the basis of a syllogism is a logical framework produced by collection and division. Third, as explained above, collection and division have shaped and informed important developments in modern mathematics. Collection and division have been, and are, important in both ancient and modern thought.

However, precisely what collection and division are and how they operate is open to debate, and recent commentators have remarked on the difficulty of defining the nature and purpose of collection and division. James Philip observes that we have "the evidence of the dialogues for the theory and practice of division ... But though we cannot doubt the importance it assumed, its nature and purpose is nowhere clearly defined ... And even if the dialogues provided us with clear answers to problems of form, there remain problems

concerning the nature of the method” (337). Similarly, Griswold states that in the *Phaedrus*, “The discussion of the art of division and collection is itself an effort to reach a definition ... Although great emphasis is placed on the exactitude of the method, the method itself does not receive an exact formulation. The descriptions vary from one another in nontrivial ways, and no one of them mentions all the important points” (188-189).

Nonetheless, important points can be gleaned from the dialogues to sketch a picture of what collection and division are, how they operate, and what they produce. In Section 1.2 below, four dialogues will be discussed to give an outline of collection and division. In Section 1.3, a more focused discussion of three passages will be presented for the purpose of introducing three operations, *seeing*, *naming*, and *placing*, through which collection and division construct logical frameworks. Section 1.4 will introduce some of the debates and unanswered questions about collection and division by reviewing recent literature, while Section 1.5 will discuss key terms that are especially relevant in the following chapters. Section 1.6 will discuss the origin and purpose of collection and division and present the argument that collection and division are wide in scope: they are not restricted to only one domain of inquiry.

## 1.2 Four illustrations of collection and division

The scope of collection and division in the Platonic corpus is debated – some claim that collection and division, or at least suggestions of them, appear in dialogues such as the *Republic* and *Gorgias*, and M.L. Gill claims that collection occurs in the

Meno (“The Divine Method” 36). However, the *Phaedrus*, the *Sophist*, the *Statesman*, and the *Philebus* are commonly held to be representative of collection and division. The *Phaedrus* presents the first extended discussion of collection and division as a unified way of reasoning. In this dialogue, collection and division are used to delineate different kinds of madness (μανία) and to clarify the nature of love (ἔρως). In the *Sophist*, the definition of the angler serves as a paradigmatic example of collection and division as a step-by-step procedure. In this case, as with the *Statesman*, the method aims to arrive at a definition or characterization of a representative individual. Unlike the *Phaedrus*, the *Sophist* and the *Statesman* present a picture of a procedure in which step-by-step details reveal some of the inner workings of the method of collection and division. In addition, taken as a whole, the *Sophist* and the *Statesman* reveal that the results of collection and division are defeasible; e.g., the definition of the sophist is revised six times before the conclusion is reached. The last dialogue to be discussed below is the *Philebus*, where the method is employed to discover the parts of a continuum, φωνή (sound). Despite the different presentations of collection and division in the four dialogues, collection and division as a way of *reasoning* (λόγος) is a common thread that runs through these dialogues. As an introduction to collection and division, these four dialogues will be discussed in more detail below in Sections 1.2.1-1.2.4.

### 1.2.1 Collection and division in the *Phaedrus*

In the *Phaedrus*, collection and division are referred to as two εἶδη, each of which plays a complementary role in a unified pair of operations. Collection is used to bring

together into one idea what Socrates calls “ἄφρον τῆς διανοίας” (*Phaedrus* 265e) – this is translated as “irrationality” (Hackforth, *Phaedrus* 133) or “mental derangements” (A. Nehamas and P. Woodruff in Plato 542). Elsewhere in the *Phaedrus* the same idea is referred to as “μανίας” (265a) and “παρανοίας” (266a) – i.e., “madness” (Goold 535; Hackforth, *Phaedrus* 133). In any case, all of these expressions refer to a single “εἶδος” or “kind.” Division “cuts” (διατέμνειν) this unified idea into two parts, *human* and *divine* (265a). The former is described as being the “left-hand” (σκαίον) part of madness, the latter as the “right-hand” (δεξιᾶ) part. In turn, the single εἶδος of *divine madness* is divided into four parts: using Griswold’s translation, these are the *prophetic* (μαντικός), *mystic* (τελεστικήν), *poetic* (ποιητικήν), and *erotic* (ἐρωτικήν) sub-kinds of divine madness (265b; Griswold 179). Figure 1, reproduced from Griswold’s *Self-Knowledge in Plato’s Phaedrus*, illustrates the relations between the parts of madness described by Socrates.

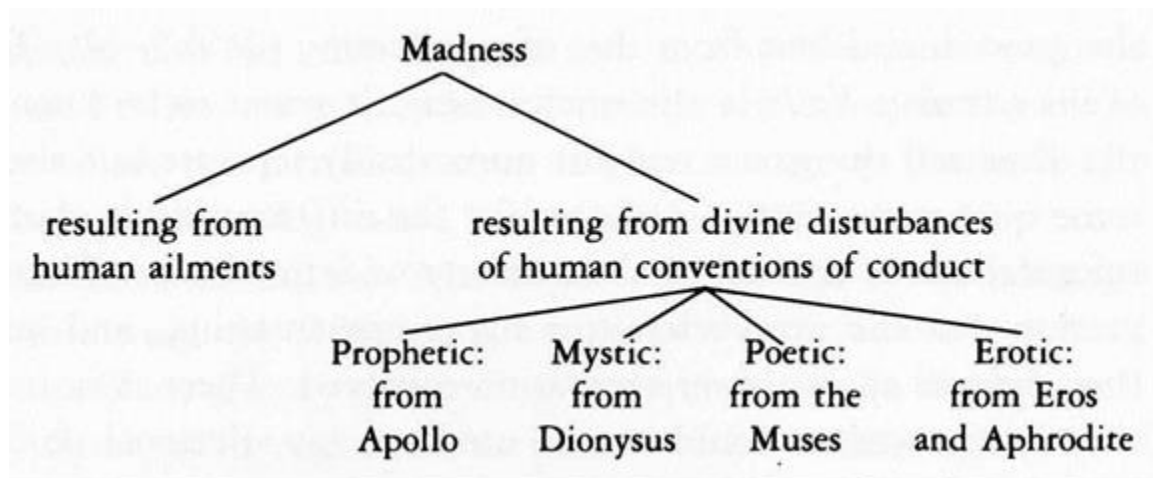


Fig. 1. The parts of madness. Charles Griswold, *Self-Knowledge in Plato’s Phaedrus* (University Park: The Pennsylvania State University Press, 1986) 179. Print.

At *Phaedrus* 265d, collection begins with the disparate and unnamed “πολλαχῆ

διεσπαρμένα” (“scattered in many ways”). Griswold points out that “whether the dispersed things are particular objects, forms, [or] sense perceptions is not specified” (179). Thus, the intended referent of “πολλαχῆ διεσπαρμένα” is unclear and a spectrum of possible interpretations is left open. Perhaps “πολλαχῆ διεσπαρμένα” are not specified because doing so would imply that collection operates within a specific domain. As will be argued in Section 1.6.3 (pg. 88), collection is all-inclusive: it can be applied to both the intelligible and the sensible.

The second key term in this passage is ‘ἄγειν,’ which means “lead,” “guide” or “bring” (Liddell and Scott 17-18), and translations of “ἄγειν” in this passage include “bring” or “bringing into” (Hackforth *Phaedrus* 132, Rowe 103), “bringing together” (Goold 533) and “seeing together” (Plato 542). The image that this passage brings to mind is that of disparate things being brought together or led into a unity. The concept of *leading* is especially informative because it supplements the image of the method as a way or road (the metaphor of the road will be discussed further in Section 1.5.2 below).

The entry for ‘ἄγω’ in Ast’s *Lexicon Platonicum* shows that there are a number of passages in Plato’s dialogues which make use of this term in an intellectual sense – i.e., to refer to a way of reasoning in which thought is “led” in a particular direction to reach a goal or endpoint. For example, in the *Republic*, the method of dialectic is illustrated by the image of ways or roads (“ὁδοί”) that lead (“ἄγουσαι”) to the end of journeying (532e). In the *Theaetetus*, Plato describes a line of reasoning as “τὴν σοφίαν ἄγουσι” (“leading to wisdom”; 172b). The term is used in this sense in Aristotle as well. For example, in *Prior Analytics I*, Aristotle expresses the result of a *reductio ad absurdum* as “εἰς τὸ ἀδύνατον



ἄγοντας<sup>77</sup> – a leading into the impossible (27a14-15). Here, a movement of thought *leads* to a judgment or conclusion. This is important because if we understand λόγος – reasoning – as a step-by-step process that reaches an endpoint (Section 1.5.3, pg. 74), then it makes sense to say that a figurative road or way (or network thereof) can guide us and lead us to an endpoint.

*Phaedrus* 265e1-266b1 describes the second εἶδος that operates with and complements collection, division. At 265d, Socrates describes this εἶδος as “τὸ πάλιν κατ' εἶδη δύνασθαι διατέμνειν κατ' ἄρθρα ἧ πέφυκεν ...” (“That of dividing things again by kinds, where the natural joints are ...”<sup>8</sup>; 265e). The word used for “dividing” is ‘διατέμνειν,’ and the expression “δύνασθαι διατέμνειν” is also translated as “to be able to cut up” (A. Nehamas and P. Woodruff in Plato 542) as well as “enabled to divide” (Hackforth, *Phaedrus* 133). Division is the reverse of collection – while collection brings together that which is similar into one idea or kind, division, when performed correctly, cuts up or divides a single εἶδος into two or more parts along the “ἄρθρα” – i.e., the natural joints. The concept is illustrated by the image of an animal that should be cut up skillfully along its joints (265e). A clumsy butcher who fails to follow the natural articulations of an animal is analogous to one who fails to divide an εἶδος into real, as opposed to contrived or illusory, parts. Thus, this passage establishes that there are objective relations among εἶδη that determine how a division should proceed; in other words, one should not simply divide haphazardly or arbitrarily, instead one must follow along the “joints” of a set of interrelated parts of a whole. That this point is made

---

<sup>7</sup> Quotations of Aristotle in Greek are from W.D. Ross, *Analytica Priora et Posteriora* and *Metaphysics* (Oxford: Clarendon Press) and from the *Thesaurus Linguae Graecae*.

<sup>8</sup> Translated by H.N. Fowler, with modifications.

indicates that all too often division is applied incorrectly.

However, some commentators argue that there may be more than one objective articulation of the same thing. Commenting on the metaphor of cutting along the natural joints of an animal, Griswold suggests that different perspectives yield different divisions:

Are there not joints that would come to light from the perspective of, say, a veterinarian but not that of a butcher, and vice versa? The veterinarian might see that while there is a joining of two bones at the elbow, there are arteries and nerves that do not divide there ... There would seem to be many natural joints; on the basis of our desires and goals we select some as the place for cutting. Indeed, one might take an axe and butcher that pitiable animal; why can we not say that where the axe falls is a natural joint, given that we wish to deform or kill the beast? (184)

That there can be more than one set of objective dividing lines in the same thing will be discussed further in Chapter 3, where it will be argued that Griswold's interpretation is correct: in other words, the same whole may be divided differently (Section 3.2.2, pg. 162). However, these are not purely subjective divisions – i.e., divisions made solely by the choices of the divider, without any objective basis – rather, they are divisions that reflect different perspectives on the same object. Thus, objectively, an animal will be divided at different points in terms of its arteries compared with points of bones. This can be seen as multiple structures that articulate the same object. Even in Griswold's example, there are particular points at which the axe must fall in order to kill the animal – one should aim for the jugular, for example, not the toe – these 'joints' are not determined by the divider, but by the biological (i.e. objective) structure of the animal.

Furthermore, a purely subjective basis for division would preclude the possibility of error, of making a mistake and dividing incorrectly. If divisions were solely up to the

divider, then there is no objective basis for determining if a division is correct or not. Yet Plato warns against dividing incorrectly – i.e., not dividing according to real parts. For example, in the *Statesman*, the division of Man into Barbarian and Greek is incorrect because it is not based on real kinds (Appendix A 25). Now it may be very useful for Athens, for example, to divide this way, but political value does not supersede objectivity. Divisions that are relative and subjective may be erroneous. Reality and truthfulness, not usefulness and efficacy, are the standards by which collection and division are judged.<sup>9</sup>

### 1.2.2 Collection and division in the *Sophist*

In the *Sophist*, the method of collection and division is depicted as a procedure for seeking out a definition or characterization. One begins by naming that which is sought – i.e., something to be defined – and employs the method with the aim of arriving at a definition. For example, how do we define the sophist as opposed to the philosopher or statesman? A question initiates a search that, if successful, will end with an accurate definition of the sophist – i.e., a definition that will correctly distinguish the sophist from those who may appear to be similar. Thus, instead of wandering between conflicting opinions, the method of collection and division provides a route to a characterization that can serve as the basis for further thought and discussion.

In the *Sophist*, Plato presents the paradigmatic example of the method in which a definition of the angler is sought and found using collection and division. This sets the stage for a much more elaborate and contentious series of divisions in which the sophist

---

<sup>9</sup> The ways in which collection and division can produce erroneous results are discussed further in Section 1.3.4 (pg. 47).

is defined and re-defined several times over until the seventh and final definition is reached at the end of the dialogue.<sup>10</sup> As a more detailed illustration of collection and division, the example of the angler indicates the inner workings of collection and division as they are employed during a step-by-step procedure.

The first step in defining the angler begins with a question posed by the Eleatic Stranger: “Tell me, shall we say that he is a man with an art, or one without an art, but having some other power?”<sup>11</sup> (“καί μοι λέγε · πότερον ὡς τεχνίτην αὐτὸν ἢ τινα ἄτεχνον, ἄλλην δὲ δύναμιν ἔχοντα θήσομεν;”; 219a). The first word of this question is ‘πότερον.’ The word ‘πότερος’ (“which of two?” or “either of the two”; Liddell and Scott 1454) is often used to indicate that a choice must be made – only one of two possibilities is correct. Other passages where this word is used include the *Sophist* 219a, the *Philebus* 20e, and the *Statesman* 261c. By restricting the target to be defined – in this case, the angler – to one of two possible kinds, the search is narrowed. It will be argued in Section 2.2.3 that placing the target to be defined within a specific kind is an elementary operation of collection and division.

It is important to note that the number of divisions is often more than two, and in many cases a more elaborate structure is mapped out when both the “length” and “width” of a kind are cut. This occurs at 266a in the *Sophist*. Here, a symmetric structure is articulated when *production* is divided into the *divine* and *human*, each of which is divided into *original production* and *copy-making* (266a-b; see Section 2.2.3.1, pg. 125). Thus, the divine and human kinds are both divided into the same parts. This shows that

---

<sup>10</sup> These definitions, as well as definitions formulated in the *Phaedrus* and the *Statesman*, are listed in Appendix B.

<sup>11</sup> Translated by H.N. Fowler (Henderson, *Sophist* 273)

the method is not restricted to dichotomous division and it indicates that symmetry can be an important feature of the logical structures that are produced by the method.<sup>12</sup>

In the first division of the angler, *art* (τέχνη) is divided into the *productive* and the *acquisitive* kinds. The question then becomes one of where to *place* the angler: “Then since acquisitive and productive art comprise all the arts, in which, Theaetetus, shall we place the art of angling?”<sup>13</sup> (“κτητικῆς δὴ καὶ ποιητικῆς συμπασῶν οὐσῶν τῶν τεχνῶν ἐν ποτέρᾳ τὴν ἀσπαλιευτικὴν, ᾧ Θεαίτητε, τιθῶμεν;”; 219d). The role of the term ‘τίθημι’ (to put or place) from which ‘τιθῶμεν’ derives, and the function of placement in collection and division will be discussed further in Section 2.2.3 (pg. 122). In short, placing defines the relationship between the parts of a whole, and it is crucial for understanding how a structure is constructed, understood, and communicated. For now, suffice it to say that placement in one of two or more sub-kinds serves to *locate* the angler in a conceptual space that is successively narrowed down, thus marking the angler off from others.

In the next step, the angler is placed under the *acquisitive* form of τέχνη. This procedure is repeated: the *acquisitive* kind of art is divided into two parts of its own, *by exchange* and *by force*, and one part is selected as the kind which applies to the angler. Ultimately, the selected parts yield a combination of characteristics that forms a λόγος “of the thing itself”<sup>14</sup> (“τὸν λόγον περὶ αὐτὸ τοῦργον εἰλήφραμεν ἰκανῶς”; 221b). Here, λόγος is a definition, and in this sense, it is the goal of collection and division (the

---

<sup>12</sup> The importance of symmetry is also emphasized in the *Phaedrus* at 266a, where the image of left and right hand parts is used to describe division.

<sup>13</sup> Translated by H.N. Fowler (Henderson, *Sophist* 275)

<sup>14</sup> Translated by H.N. Fowler (Henderson, *Sophist* 281)

meaning of the word ‘λόγος’ will be discussed in detail in Section 1.5.1 (pg. 66). In other words, the series of characteristics under which the angler is placed, when collected together into a statement along with the highest kind, τέχνη, yields a definition or characterization of the angler. This final result is expressed by the Eleatic Stranger as shown in Appendix B 2. The object of the search has been found and the name ‘ἀσπαλιευτής’ (angler) now has an account (τὸν λόγον). In this passage, “τὸν λόγον” is often translated as a “definition,” but as discussed in Section 1.5.1 and in Chapter 3, it is debatable whether the λόγος is a definition in the usual sense of the word, and “characterization” is also a suitable translation. It will be argued in Section 3.2.2 (pg. 162) that a λόγος is not meant to serve as a singular definition (i.e., a definition that, if true, rules out other definitions), but one of possibly multiple characterizations that serve to distinguish the object that is studied.

One interpretation of the process described above is that it is a procedure based on disjunction elimination. Under this reading, each division yields mutually exclusive sub-kinds, where each sub-kind serves as a disjunct. At each step a single disjunct is selected, thereby ruling out the other disjuncts. Thus, with the first step, one infers that the angler practices an acquisitive kind of τέχνη, thereby eliminating the possibility that the angler falls under the remaining disjunct, the productive kind. This process is repeated, and when the final division is made, the conclusion is the collection of kinds and sub-kinds that have not been eliminated. However, under some interpretations of the method, this model does not hold in all cases. In some cases, division does not yield mutually exclusive sub-kinds; rather, parts of a whole can overlap and form more complex relations. The latter are seen in the Fabric and Lens models, which will be discussed in

detail in Chapter 3.

Two other points may be gleaned from the example of the angler. First, it is unclear whether the divisions concern a kind or a representative individual. In the first step, attention is placed on an imaginary figure referred to as “him” (“αὐτὸν”; 219a), and it is noteworthy that in general, the divisions are often worded as though they refer to an individual, not to a kind. Under one interpretation, the individual can be seen as a stand-in or symbol for a kind, a literary device for simplifying and shortening the introductory illustration of the method, and for gaining the interlocutor’s interest. Arguably, personification was used for the angler only to make the lesson simpler. But personification is used outside of the introductory lesson of the angler – e.g., the sophist is referred to as an individual throughout the dialogue.

Under a different though not incompatible reading Plato had other reasons for personifying the angler. Personification allows us to easily visualize a representative individual such as the angler side-by-side in our imagination with other individuals, such as a farmer or the sophist. Because the angler is seen as an individual, his activities and other characteristics can be visualized clearly in the imagination. In addition, we can narrow in on an individual through successive divisions, “trapping” him as the sophist is trapped. More specifically, the use of a figurative individual such as the angler or sophist reinforces the idea of placement: when we use the method to produce a definition, we are not only placing kinds within one another, but also individuals within kinds, much as a piece on a chessboard is placed and moved to various locations on the board. Thus, by placing the angler under *acquisition* instead of *production*, the former becomes part of his definition; i.e., the angler is an acquisitive, not a productive, artisan. In short, there are

two kinds of placement: in one case, placing establishes the relations between parts of a whole to each other (i.e., the parts of a concept are “mapped out,” as in figure 1); in the other, such as the one just described, placing a representative individual under a kind or class specifies the concepts that together comprise the definition of the individual. These two kinds of placement will be discussed further in Section 2.2.3 (pg. 122).

The second point to be gleaned from the lesson of the angler is that it provides an opportunity to develop one’s ability to think and to imagine. Many of the divisions of the dialogues postulate relations between concepts that are surprising, if not counter-intuitive. For example, in the *Phaedrus*, *madness* has a *divine* as well as a *human* aspect. While the example of the angler is introduced as being “well known and small” (“εὖγνωστον μὲν καὶ μικρόν”; 218e), the examples used to justify and illustrate the divisions are not at all obvious or easily grasped. For example, the Stranger illustrates the idea of *production* as follows:

Ξένος: Ἄλλὰ μὴν τῶν γε τεχνῶν πασῶν σχεδὸν εἶδη δύο.

Θεαίτητος: Πῶς;

Ξένος: Γεωργία μὲν καὶ ὅση περὶ τὸ θνητὸν πᾶν σῶμα (10)

θεραπεία, τὸ τε αὖ περὶ τὸ σύνθετον καὶ πλαστόν, ὃ δὴ

(b) σκεῦος ὠνομάκαμεν, ἢ τε μιμητική, σύμπαντα ταῦτα δικαιοτάτ’

ἂν ἐνὶ προσαγορευοίτ’ ἂν ὀνόματι.

Θεαίτητος: Πῶς καὶ τίτι;

Ξένος: Πᾶν ὅπερ ἂν μὴ πρότερόν τις ὄν ὕστερον εἰς οὐσίαν

ἄγη, τὸν μὲν ἄγοντα ποιεῖν, τὸ δὲ ἀγόμενον ποιεῖσθαί πού (5)

φάμεν (219a8-b6).

Stranger: But the arts as a whole, generally speaking, fall into two types.

Theaetetus: How?

Stranger: There’s farming, or any sort of caring for any mortal body; and there’s also caring for things that are put together or fabricated, which we call equipment; and there’s imitation. The right thing would be to call all those things by a single name.

Theaetetus: How? What name?

Stranger: When you bring anything into being that wasn’t in being before, we say



you're a producer and that the thing you've brought into being is produced.<sup>15</sup>

Thus, the concept of *production* is illustrated with the following examples:

Farming (‘Γεωργία’)

Caring for any mortal body (‘τὸ θνητὸν πᾶν σῶμα θεραπεία’)

Equipment (‘τό τε αὖ περὶ τὸ σύνθετον καὶ πλαστόν’)

Imitation (‘μιμητική’)

The examples listed for *acquisition* at 219c, the kind in which the angler falls, are just as puzzling:

Learning (‘μαθηματικὸν’)

Money-making (‘χρηματιστικός’)

Combat (‘ἀγωνιστικός’)

Hunting (‘θηρευτικός’)

It is not evident what learning has to do with combat and money-making, and at first glance the differences seem to outweigh the similarities. There are at least two explanations for the puzzling nature of these examples. First, the examples indicate that the method is not restricted to one domain of inquiry. For example, in the first case, the use of obvious examples of production such as cobbling, carpentry, and weaving would suggest that the method is restricted to empirical observations: one has observed shoe-

---

<sup>15</sup> Translated after Nicholas P. White (Plato 39), with modifications.

makers, carpenters, and weavers in action, and based on these observations, concludes that they all have a common characteristic. This would resemble an inductive procedure in which various animal species are classified under genera, for example. But, as will be explained in Chapter 3, genus-species divisions are only one aspect of the method. The use of eclectic examples illustrates that the method is not restricted to one domain of inquiry even within a single division. This tells us how broad the method of collection and division is: it is not a means by which a classification within a narrow domain is established. This passage from the angler tells us that very surprising discoveries can be made – discoveries that cross the boundaries between established domains of inquiry. Reflection on the examples used to illustrate the concept of *production* in the angler motivates us to question what the concept comprises – i.e., reflection brings to light a different perspective on *production* and it widens its scope. In other words, there are aspects of the concept that are hidden from us, and these aspects (or “parts” of the concept) come to light when we consider the possibility that imitation, among many other things, is a part of production.

### 1.2.3 Collection and division in the *Statesman*

*The Statesman* is similar to *The Sophist* in that there is an attempt made by the Eleatic Stranger and his interlocutors to define a kind of individual. However, in the *Statesman* the Stranger is more confident in his approach – unlike the sophist, the statesman does not require the revision of six definitions before the conclusion is reached. Nonetheless, the first definition produced at 267a-c (Appendix B 10) is recognized as

flawed; just after the Stranger presents his definition of the statesman to his interlocutor, Young Socrates, he states his doubts:

ΞΕ. Ἄρα γ', ὃ Σώκρατες, ἀληθῶς ἡμῖν τοῦτο καθάπερ (5)  
σὺ νῦν εἴρηκας οὕτως ἐστὶ καὶ πεπραγμένον;

ΝΕ. ΣΩ. Τὸ ποῖον δὴ;

ΞΕ. Τὸ παντάπασιν ἰκανῶς εἰρησθαι τὸ προτεθέν; ἢ  
τοῦτ' αὐτὸ καὶ μάλιστα ἢ ζήτησις ἐλλείπει, τὸ τὸν λόγον  
(d) εἰρησθαι μὲν πως, οὐ μὴν παντάπασι γε τελέως ἀπειργάσθαι; (267c5-d1)

Stranger: Is it really the case, Socrates, that we have actually done this, as you have just said?

Young Socrates: Done what?

Stranger: Given a completely adequate response to the matter we raised. Or is our search lacking especially in just this respect, that our account of the matter has been stated in a certain way, but has not been finished off to complete perfection?<sup>16</sup>

The definition is inadequate because the statesman has not been sufficiently marked off from those who are similar to him. More specifically, by placing the statesman in the class of the herdsman of the human, the Stranger failed to mark him off from others who fall within the same kind, such as merchants, farmers, millers and bakers (267e). The problem is that he is placed in a kind that is too broad to serve adequately in a definition:

ΞΕ. Πῶς οὖν ἡμῖν ὁ λόγος ὀρθὸς φανεῖται καὶ ἀκέραιος  
(c) ὁ περὶ τοῦ βασιλέως, ὅταν αὐτὸν νομέα καὶ τροφὸν ἀγέλης  
ἀνθρωπίνης θῶμεν μόνον ἐκκρίνοντες μυρίων ἄλλων ἀμφισ-  
βητούντων;

ΝΕ. ΣΩ. Οὐδαμῶς.

ΞΕ. Οὐκοῦν ὀρθῶς ὀλίγον ἔμπροσθεν ἐφοβήθημεν ὑπο- (5)  
πεύσαντες μὴ λέγοντες μὲν τι τυγχάνοιμεν σχῆμα βασιλικόν,  
οὐ μὴν ἀπειργασμένοι γε εἶμέν πω δι' ἀκριβείας τὸν πολι-  
τικόν, ἕως ἂν τοὺς περιεχυμένους αὐτῷ καὶ τῆς συννομῆς

<sup>16</sup> Translated by C.J. Rowe (Plato 308)

αὐτῷ ἀντιποιομένους περιελόντες καὶ χωρίσαντες ἀπ’ ἐκείνων  
καθαρὸν μόνον αὐτὸν ἀποφήνωμεν; (268b8-268c10) (10)

Stranger: So how will our account of the king appear to us right and complete, when we posit him as sole herdsman and rearer of the human herd, singling him out on his own from among tens of thousands of others who dispute the title with him?

Young Socrates: There’s no way in which it can.

Stranger: Then our fears a little earlier were right, when we suspected that we should prove in fact to be describing some kingly figure, but not yet accurately to have finished the statesman off, until we remove those who crowd round him, pretending to share his herding function with him, and having separated him from them, we reveal him on his own, uncontaminated with anyone else?<sup>17</sup>

Here, the Stranger “posits” (“θῶμεν”) the statesman in the same kind as countless others – i.e., the statesman is placed within a kind, *human herding*, that is too broad because it includes others from which the statesman should be distinguished. The statesman needs to be separated from the others so that he can be singled out and “revealed” (ἀποφαίνω). Thus, the object of the search and the goal is to hone in on the statesman so that he is not confused with something else. In other words, while a “kingly figure” (σχῆμα βασιλικόν) has been found, it is incomplete; like a sketch or outline, it is only a partial picture.

However, before the definition is revised through collection and division, a myth is introduced and elaborated (268e -274e). The Myth of Cronus explores the possibility of divine as well as human herdsmanship and presses home the point that unlike the divine herdsman, the statesman needs to be distinguished from those others – e.g., merchants and farmers – who also care for the human herd (275b). After the myth concludes, a second set of divisions is performed, yielding a new kind under which the statesman falls, the kind of herdsman that cares for the entire human community as a whole (276b). But it

---

<sup>17</sup> Translated by C.J. Rowe (Plato 309), with slight modifications.

is soon pointed out that this too does not sufficiently define the statesman, because tyrants also fall within this kind:

(e) ΞΕ. Καὶ ταύτη που τὸ πρότερον ἀμαρτάνοντες εὐηθέστερα τοῦ δέοντος εἰς ταῦτὸν βασιλέα καὶ τύραννον συνέθεμεν, ἀνομοιοτάτους ὄντας αὐτούς τε καὶ τὸν τῆς ἀρχῆς ἑκατέρου τρόπον (276e1-4).

Stranger: I think we made a mistake before in this way too, by behaving more simple-mindedly than we should have. We put king and tyrant into the same category, when both they themselves and the manner of their rule are very unlike one another.<sup>18</sup>

Thus, since the statesman and the tyrant are “placed together” (‘συνέθεμεν’) into the same kind, this division too is mistaken. Once again, the statesman is confused with others with whom he should be distinguished. For this reason, the method has failed to produce an adequate definition. Again, the Stranger states that the definition is incomplete:

...ἀλλ’ ἀτεχνῶς ὁ  
(c) λόγος ἡμῶν ὥσπερ ζῶον τὴν ἔξωθεν μὲν περιγραφὴν ἔοικεν ἱκανῶς ἔχειν, τὴν δὲ οἷον τοῖς φαρμάκοις καὶ τῇ συγκράσει τῶν χρωμάτων ἐνάργειαν οὐκ ἀπειληφέναι πῶ. (277b7-c3)

...and our account, just like a portrait, seems adequate in its superficial outline, but not yet to have received its proper clarity, as it were with paints and the mixing together of colors.<sup>19</sup>

Using weaving as a model (279b), a new series of divisions ends with the result that the

---

<sup>18</sup> Translated by C.J. Rowe (Plato 318).

<sup>19</sup> Translated by C.J. Rowe (Plato 319).

statesman is a special kind of weaver: he weaves human beings together into a coherent society (310e-311a). The final definition at 311b7-311c6 (Appendix B 11) is described by Socrates as follows: “Another most excellent portrait, Stranger, this one that you have completed for us, of the man who possesses the art of kingship: the statesman.”<sup>20</sup> (“Κάλλιστα αὖ τὸν βασιλικὸν ἀπετέλεσας ἄνδρα ἡμῖν, ὃ ξένη, καὶ τὸν πολιτικόν.”; 311c7-8).

The end result is an account of the statesman that is considered to be complete: it tells us who the statesman is by distinguishing him from those who appear to be similar, but in reality differ in fundamental ways.

In conclusion, like the *Sophist*, the *Statesman* shows that definitions produced through collection and division are defeasible. In other words, a definition is formulated and questioned, and if errors are discovered, then a new series of divisions are performed in which the parts – i.e. kinds or aspects – into which the statesman falls are refined. In some cases, the error is that the target to be defined – in this case, the statesman – is placed into a kind which fails to distinguish him from others who appear to be similar. Thus, the parts in which the target is placed must separate the target from that with which it is similar. The *Statesman* is interesting also because a myth is used to guide a division. This is to be distinguished from cases in which other forms of reasoning are used to guide or evaluate a division; e.g., in the *Sophist*, dialectical argument<sup>21</sup> is used to settle a question of placement (see Section 1.3.3, pg. 45). This shows that various ways of reasoning are used to revise an incorrect division. Thus, while dialectical argument may be one way of reflecting on the results of collection and division, it is not the only way.

---

<sup>20</sup> Translated by C.J. Rowe (Plato 358), with modifications.

<sup>21</sup> The arguments are dialectical in the sense that they concern the investigation of the five highest Forms.

This will be discussed further in Section 2.2.4 (pg. 129), where three ways of reasoning about a definition will be described.

#### 1.2.4 Collection and division in the *Philebus*

The *Philebus* represents an important development of the method of collection and division, but the dialogue is notoriously difficult to interpret, however, and it has become the subject of a great deal of debate among scholars. J.C.B. Gosling's translation and commentary, published in 1975, has established a reference point for interpreters of the *Philebus*. It serves as an overview of the dialogue and its points of contention, and Gosling discusses passages which have received a great deal of scholarly attention, some or all of which may shed light on collection and division. These passages are named by Gosling as follows: "The One and the Many" (*Philebus* 14-16), "The Heavenly Tradition" (*Philebus* 16-19) and "The Determinant and Indeterminate" (*Philebus* 23-28).

"The Heavenly Tradition" is the center-point but has "proved extremely recalcitrant to interpretation" (Gosling 154). In Gosling's view, among recent commentators it has spawned two opposing lines of interpretation. Differences in agreement hinge on whether 16c-17a is interpreted as "things from time to time said to be" or "the things said always to be" (Gosling 155). Under the former interpretation, the method is applicable to all things – e.g. Forms, numbers, and physical things. The latter is the more common interpretation, according to Gosling. In this case, the method is understood to apply to genus-species divisions of Forms or universals (Gosling 160). Here, the concept of the unlimited is seen not as a part of collection and division, but

rather as an ancillary device brought into play to address some of the problems that are unique to the *Philebus* (Gosling 161).

One of the main difficulties in interpreting the *Philebus* as a coherent dialogue is the concept of the unlimited (ἄπειρον). Depending on the interpretation, ‘ἄπειρον’ can refer to the variable characteristics of particulars, to an unlimited number of individuals, or to an undifferentiated continuum, the latter of which may be a kind (e.g., pleasure) that can be divided into sub-kinds, or a unified phenomenon, such as φωνή (“sound”) (Gosling 62). In Chapter 4, it will be argued that Plato’s description of the unlimited and the limited shed light on the relation between collection and division and deductive reasoning. More specifically, using Aristotle’s syllogistic as a representative example of a deductive system, I will present the argument that limits between the parts of a continuum that are discovered through collection and division correspond to the terms of a syllogism.

In the *Philebus*, collection and division are used to divide speech (φωνή) into three kinds, vowels, consonants, and mutes (18b5-18d2; see Appendix A 49). This passage shows that while collection and division may resemble inductive reasoning, there is a key difference. Here, Theuth is not studying objects that are already defined or even recognizable at first. This is not typically the case with scientific inductive reasoning. For example, when studying an animal species, a biologist may first locate a population of animals in their native habitat and compare them, looking for similarities or differences between members of the species. But this kind of induction presupposes that one already knows how to identify and locate the members of the species. In other words, the “parts” of the species – the particular organisms that belong to the species – are already



identifiable; i.e., they are recognized as such and while knowledge of their characteristics is incomplete, they are at least seen as members of the species. Otherwise, the biologist would not know where to begin. To use another example, one more closely related to collection and division in the *Philebus*, a present-day linguist may observe and collect data on variation of pronunciation of vowels among native speakers of English. But this presupposes that not only can vowels be recognized as such, but that there is such a thing as a vowel, that each vowel is an instance of the same kind or genus, and that this kind or genus is a “part” of sound. But one practicing collection and division would, at least in some cases, have to start with a unified phenomenon such as human speech without preconceptions about its parts – i.e., neither knowledge nor presuppositions about the kinds of sound (vowels, consonants, mutes) nor the elements of speech are necessarily present when the investigation begins. In other words, neither the kinds nor the letters are discerned (i.e. “seen”) as parts of sound. Instead, sound is perceived as something of an opaque whole – its internal structure (if any) is hidden from view.

In his discussion on Theuth’s discovery of sound in the *Philebus*, Menn states the following:

Theuth originally recognizes φωνή simply by hearing spoken language: since no written language yet exists, and since Theuth has not performed the analysis of language that will lead him to the concept of στοιχεῖον, what he initially recognizes is not a set of units of sound, but simply continuous speech. He recognizes φωνή as ἄπειρόν, not because there are several kinds of indivisible φωναί, but because there are an unlimited variety of φωναί of all lengths. In fact Plato avoids the plural φωναί, preferring to speak of φωνή in the singular as something that is both one and infinitely many; so perhaps it would be better to speak of many sections of φωνή or many modifications of φωνή rather than of many φωναί ... (294)

Thus, neither the elements nor the kinds of an indeterminate whole are necessarily known before collection and division are applied. To use an analogy, while native speakers of a language may know how to *use* the language and its elements, without a definition of the alphabet and an enumeration of the kinds of speech, they wouldn't know how to distinguish and name the parts of the language and trace out their relations.

In conclusion, there is no established interpretation of the indeterminate; 'ἄπειρον' can refer to the variable characteristics of particulars, to an unlimited number of individuals, or to an undifferentiated continuum, the latter of which may be a kind or a unified phenomenon, such as φωνή ("sound"). In Section 2.5 (pg. 152), it will be argued that collection and division define the structure of a continuum by means of discerning, naming, and ordering its parts. In addition, the method of collection and division is not always inductive in the conventional sense of the word – it is also the *discovery* of new kinds as well as the discovery of similarities and differences between kinds that are already recognized. In short, the method of collection and division is not to be confused with inductive reasoning that operates solely within predetermined domains of inquiry.

### 1.2.5 Comparison

In conclusion, the four dialogues discussed above yield different impressions of collection and division. In the *Phaedrus*, collection and division are not defined as a single procedure to be carried out methodically, but instead as two εἶδη that are described by Socrates in general terms. The *Sophist* and the *Statesman*, on the other hand, present a picture of a procedure in which step-by-step details reveal some of the inner workings of

the method. In addition, taken as a whole, the *Sophist* and the *Statesman* reveal the tentative nature of the method: definitions are revised before a conclusion is reached. Moreover, while the *Phaedrus* yields a structure in which two kinds of madness and four sub-kinds of divine madness are mapped out, ultimately yielding a definition of love, collection and division in the *Sophist* and the *Statesman* result in the definition of a representative individual. The descriptions of collection and division in the *Philebus* resemble those of the *Phaedrus* in this sense: rather than defining a representative individual, the parts of a concept such as *sound* (φωνή) are mapped out.

Despite these differences, the method of collection and division as a *way of reasoning* is a thread that binds the descriptions of the method in the four dialogues. In other words, collection and division lead to a definition or logical framework by way of reasoning – i.e., by way of λόγος. On the other hand, the definition or logical framework – i.e., the endpoint of the reasoning process – is itself described as a ‘λόγος.’ In short, ‘λόγος’ means *reasoning* in one context, *definition* or *account* in another. It is a process or activity in the former case, and the object of a search in the latter.

### **1.3 Three operations of collection and division: *seeing*, *naming*, and *placing***

Three passages from Appendix A, (1) *Statesman* 285a4-285b6, (2) *Statesman* 260d11-261a9, and (3) *Sophist* 235c8-235d5 will be discussed below for the purpose of giving a more focused introduction to collection and division. In the following sections, three operations by which collection and division produce a logical framework, *seeing*,

*naming*, and *placing*, will be introduced. This section will set the stage for a more detailed discussion of each operation in Chapter 2.

### 1.3.1 *Statesman* 285a4-285b6 (Appendix A 44)

In the *Statesman*, the Eleatic Stranger divides the concept *μέτρησις* (*measurement*) after criticizing “many of the sophisticated people” (“πολλοὶ τῶν κομψῶν”; 285a1) who fail to see that the art of measurement has two kinds or “parts” (μέρος): (1) the measurement of number, lengths, etc. on the one hand, and (2) the measurement of what is fitting, i.e. “what is as it ought to be” on the other (284e2-8; Appendix A 43). So-called sophisticated people fail to make this distinction.

In this passage, the importance of being able to *see* (εἶδον) or *perceive* (αἰσθάνομαι) similarities and differences is highlighted. Here, even seemingly sophisticated people can treat a concept as a whole while failing to see that it has parts. In other words, while the concept of measurement is recognized as a whole, the relevant and irrelevant *parts* of the conceptual whole are not discerned. Moreover, the perception of similarities as well as differences should be discerned – in other words, a “community” (“κοινωνία”) of the members of a group is to be discerned (285b1). In short, both differences and similarities are to be discovered; differences correspond to the parts of a whole, while similarities correspond to that which unifies the parts into a whole. The discernment of similarities and differences is the operation of *seeing*; this will be discussed in detail in Section 2.2.1 (pg. 103).

### 1.3.2 *Statesman* 260d11-261a9 (Appendix A 21)

In this passage, the Stranger is dividing directive expertise (ἐπιτακτική τέχνη; 260c6) into two kinds. On the one hand is the kind that includes interpreters, seers, heralds, and many others (260d11-260e1), while on the other are the “self-directors” (“τῶν αὐτεπιτακτῶν”). The purpose of the division is to narrow down the particular kind of directive expertise that applies to the statesman, being careful not to confuse him with others who only appear to be similar. In other words, in order to provide a definition of the statesman, he must be grouped with the self-directors, otherwise he cannot be distinguished from those who are not of the same kind, such as heralds and the like. This is a kind of “narrowing down” or “honing in” to a definition. To use an analogy, one could arrive at a definition of the number two by first locating it within the prime numbers, and then marking it off from the other numbers by locating it within the set of even numbers. Similarly, with the statesman, he is first located within the kind of directive experts, and then distinguished from others by locating him in the kind of self-directors, lest he be confused with heralds, seers, and those of similar ilk.

The importance of naming is emphasized in this passage. While the part of directive expertise that comprises heralds, seers, etc. remains nameless because the statesman does not fall within this kind, the name ‘self-directors’ is coined for the purpose of *articulating differences*, that is for *marking off* the statesman from those who appear to be similar (260e). Since heralds, seers, etc. are directors of a sort but not *self*-directors, the name serves as a device for distinguishing the statesman from those who

appear to be similar. In addition, the name ‘self-directors’ is fabricated in such a way as to indicate the *meaning* or *content* of the kind to which the statesman belongs. These functions of naming will be discussed further in Section 2.2.2 (pg. 114).

### 1.3.3 *Sophist* 235c8-235d5 (Appendix A 13)

In the *Sophist*, the Stranger divides the imitative (μῆμητικός) into two kinds (Appendix A 13). At 236c6-7 the two kinds are named “likeness-making” (“εἰδωλοποικῆς”) and “appearance-making” (“φανταστικῆν”). But at this stage, it is not clear to which kind the sophist belongs; i.e., the Stranger does not know where to place the sophist: “But still I can’t see clearly the thing I was in doubt about then, namely, which type we should put the sophist in...”<sup>22</sup> (“Ὁ δέ γε καὶ τότε ἠμφεγνόουν, <ἐν> ποτέρῃ τὸν σοφιστὴν θετέον, οὐδὲ νῦν πῶ δύναμαι θεάσασθαι σαφῶς...”; 236c9-10). After a series of dialectical arguments, the sophist is placed under appearance-making, and that in turn is to be divided (“cut”) into two:

ΞΕ. Καὶ μὴν ὅτι γ’ ἦν ὁ σοφιστὴς τούτων πότερον, διωμολογημένον ἡμῖν ἐν τοῖς πρόσθεν ἦν.

ΘΕΑΙ. Ναί.

ΞΕ. Πάλιν τοίνυν ἐπιχειρῶμεν, σχίζοντες διχῆ τὸ (10) (ε) προτεθὲν γένος, πορεύεσθαι κατὰ τοῦ πῖ δεξιὰ ἀεὶ μέρος τοῦ τμηθέντος, ἐχόμενοι τῆς τοῦ σοφιστοῦ κοινωνίας, ἕως ἂν αὐτοῦ τὰ κοινὰ πάντα περιελόντες ... (264d7-264e3)

Stranger: And we agreed before that the sophist does fall under one of the two types [i.e., appearance-making] we just mentioned.

Theaetetus: Yes.

Stranger: Then let’s try again to take the kind we’ve posited and cut it in two. Let’s go ahead and always follow the righthand part of what we’ve

<sup>22</sup> Translated by Nicholas P. White (Plato 257), with slight modifications.

cut, and hold onto things that the sophist is associated with until we strip away everything that he has in common with other things.<sup>23</sup>

To summarize, there is a movement from seeing the parts of a conceptual whole (in this case, *imitation*; 235c8-d1), to naming them (236c6-7), to eventually positing the part in which the target to be defined, the sophist, falls (264d7-11). In other words, two parts of imitation are discerned, they are named, there is confusion about which part the sophist falls under, and eventually the matter is settled: the sophist should be placed in the appearance-making kind. This process drives the inference forward, and the name of the kind in which the sophist is placed then becomes part of the definition of the sophist (268c8-268d4; see Appendix B 9). Thus, *placing* the sophist in a *named part* is a kind of resolution, a kind of decision-making that moves one step forward to the definition.

Note too that the Stranger gives the instruction to follow “the righthand part” (“δεξιὰ ... μέρος”); in other words, the sophist is imagined to escape into certain “kinds” that are placed relative to each other: the kind on the “left” is to be avoided, while the kind on the “right” is to be incorporated in the final definition. Both kinds are parts of another concept – i.e., *likeness-making* and *appearance-making* are both parts of *imitation* – but the sophist is placed in only one. In turn, this one kind is then divided into two using the concepts *through tools* and *through one’s self* (267a), and the process is repeated. In each step, the kind on the “left” is “stripped away,” thereby distinguishing the sophist from others who appear to be similar. The sophist is located in the remaining kind, and the process is repeated until a definition is reached. This process is described in more detail in the discussion of the angler, where again certain parts of a concept are removed and considered irrelevant to the definition sought, while other parts are included

---

<sup>23</sup> Translated by Nicholas P. White (Plato 289), with slight modifications.

in the final definition (see Section 1.2.2, pg. 26).

### 1.3.4 Conclusion

Roughly, in terms of division, *seeing* is the discernment of the parts of a whole, *naming* articulates and establishes the differences between the parts, and *placing* defines the relevant parts of the definition and the relations between the parts of a whole. The end result of a series of *seeing*, *naming*, and *placing* operations is a definition, as shown in Appendix B. Each of the three operations will be discussed further in Sections 2.2.1-2.2.3 (pp. 98-127) and this analysis as a whole will be compared with interpretations of collection and division presented by Moravcsik and Cohen (Section 2.2, pg. 98).

In general, a definition produced through collection and division can be understood as a logical framework that serves as the basis for deductive and non-deductive forms of reasoning. The upshot is that despite Aristotle's claim to the contrary, division is not a weak form of syllogistic reasoning (see Section 4.3.2, pg. 192). Rather, it will be argued in Chapter 4 that collection and division yield logical structures that make syllogistic reasoning possible. Without a logical framework produced by collection and division, the interrelations between terms remain undefined – it is only when terms are woven into whole-part relations that a deduction becomes possible. Moreover, *if* parts are not arranged in a strict hierarchy but overlap, then the interrelated parts do not form the basis of syllogisms such as Barbara and other moods in the syllogistic. Even a simple definition produced by collection and division such as *love is a kind of madness* or *piety is a kind of prosecution* constitutes a logical framework. These are minimal frameworks



in the sense that only two concepts are interrelated. Therefore, they cannot serve as the basis for syllogistic reasoning, which requires three terms. However, these minimal frameworks are useful for other forms of reasoning, i.e. reasoning that is not based on strict hierarchies of kinds.

While frameworks defined through the three operations described above underlie deductive and non-deductive reasoning, collection and division do not guarantee that a framework is truthful, nor do they guarantee that an argument based on a framework is sound. By means of the three operations, collection and division are typically employed *with the intention* of defining a framework that is truthful – i.e., one that accurately describes the target being defined. Thus, the definition of the sophist is revised six times to remove deficiencies in the framework that is being formulated and to arrive at a result that is presumably correct. However, because the three operations described above are prone to error, the question arises as to what is meant by “presumably correct.” The fact that a framework has survived the test of refutation is an indication that it is a correct definition. Thus, since the final definition of the sophist is the product of a lengthy series of arguments that were employed to pinpoint and remove flaws in the provisional frameworks, there is evidence that the final definition is truthful. However, there is *only* evidence – i.e., there is an *indication* that *seeing*, *naming*, and *placing* have ultimately defined a framework that is free of error. Thus, even when a framework has survived the method of elenchus or a similar form of argument, there is no guarantee that the framework is correct. This is explored in detail in Section 2.2.1.3, where it is argued that

Plato does not specify how one actually *sees* the parts of a conceptual whole, and this limitation applies to *naming* and *placing* as well.<sup>24</sup>

Thus, the method of collection and division does not constitute a proof procedure; i.e., it does not prescribe specific rules for formulating a valid argument, nor does it guarantee that a definition is correct. Instead, the three operations of collection and division facilitate the construction of sound arguments and provide the necessary groundwork for deductive and non-deductive inference. In short, the method in and of itself does not provide a means for evaluating the correctness of its results.

Moreover, collection and division are susceptible to deliberate misuse. Section 3.3 discusses cases in which errors may be intentionally introduced by the divider. For example, it may be advantageous for Greeks to classify all non-Greeks as natural slaves. While this is clearly an egregious misuse of the method and its operations, the resulting framework could become an ideology if it is sufficiently beneficial to the dividers. This form of erroneous reasoning should be distinguished from the misapplication of collection and division described just above, in which the divider is aiming for a truthful definition, but misses the mark despite his or her best intentions.

## 1.4 Literature Review

Secondary literature on collection and division has accumulated over centuries. This review will discuss publications primarily from the modern period and will focus on

---

<sup>24</sup> In Sections 6.3-6.4, it is suggested that recollection of the Forms may allow one to determine whether a framework matches reality. However, in my view the process of recollection is above and beyond the three operations that underlie collection and division, and the method in and of itself does not tell us whether its results are successful.

seminal works from the 20<sup>th</sup> century in addition to more recent publications. The purpose of this review is to provide an overview of some of the debates on, and varying interpretations of, collection and division in recent literature, thereby setting the stage for the topics and arguments that are presented in detail in the remaining chapters. More specifically, this review will discuss different perspectives on the scope and purpose of the method of collection and division, its relations to other forms of reasoning, the nature of the structures produced by collection and division and criticisms of the method old and new.

#### 1.4.1 Scope and purpose of collection and division

A seminal work in the recent literature that provides an overview of the method is John Ackrill's essay, "In Defense of Platonic Division." Ackrill discusses two primary uses of the method: it can be used to define a term or to analyze a general concept (103). Both of these functions are important to collection and division and to the method of dialectic, and each will be discussed below.

Ackrill states that although using the method for the purpose of definition involves neither deduction nor *a priori* reasoning, it plays a crucial role in philosophy (104). After discussing the role of the method in the *Phaedrus*, *Sophist*, *Statesman*, and *Philebus*, he states the following:

Interest in the 'What is it?' question and the search for definition are of course as characteristic of earlier Socratic dialogues as of these later dialogues... What is clear (and relevant) is that Plato sees the definition of terms as one of the aims of division, and that from Socrates to Aristotle such definition – elucidating the meaning of interesting terms – is regarded as an important task in philosophy (104).

This evaluation is echoed by J.R. Trevaskis. He states that, in dialogues such as the *Sophist* and the *Phaedrus*, the method of division is used to provide definitions for disputed terms, a task that is “of extreme importance” (Trevaskis, “Division and its Relation to Dialectic” 128). For example, in the *Phaedrus*, terms central to philosophy and to common discourse such as ‘good’ and ‘love’ are disputed – they mean different things to different people – and for this reason it is important to remove ambiguity and to formulate definitions; this is one of the primary uses of division (Trevaskis, “Division and its Relation to Dialectic” 128). Thus, according to Trevaskis, division plays a crucial role in both philosophy and everyday discourse.

The second purpose of collection and division described by Ackrill is the analysis of general concepts. This involves the articulation of a genus into species, or a kind into sub-kinds (Ackrill 104). Examples of this use of the method include defining the various kinds of pleasure – a very involved and nuanced discussion in the *Philebus* – and investigating the forms of madness as described in the *Phaedrus* (Ackrill 105). For example, in the latter case, madness is divided into “kinds” such as human and divine (*Phaedrus* 265a).

In addition to the two functions discussed by Ackrill, Trevaskis describes another feature of the method which is “clearly supereminent ... It is referred to in essence at *Phaedrus* 266b where Socrates justifies his enthusiasm for the method of Division by its conferring on him the ability ‘to speak and to think’” (Trevaskis, “Division and its Relation to Dialectic” 129). This feature of the method is also mentioned at *Statesman* 285d, where it is explained that the central purpose of the discussion is not to define the

statesman but to make the discussants better dialecticians. In Trevaskis' words, the method in this case is viewed as a means to improve "general powers of philosophical discussion" ("Division and its Relation to Dialectic" 129). To practice the method is to train oneself to apprehend the Forms, these being the ultimate aim of everything that is said (*Statesman* 286a). In short, the method is "a practice routine in philosophy" (Trevaskis, "Division and its Relation to Dialectic" 129).

Trevaskis is right to point out the claim made in the *Phaedrus* that division confers the ability "to think and to speak" – this remark shows that collection and division are fundamental to reasoning. However, in my view collection and division are not just "a practice routine in philosophy," but routine in human thought. Does it really take a philosopher, for example, to formulate a tentative definition of love? Dialectic may be required to determine the interrelations between Forms (see Section 1.4.2 below), but formulating a definition in and of itself does not require a philosopher. In Chapter 5, it will be argued that when Meno and Euthyphro formulate definitions of virtue and piety, they are doing so by means of collection and division.

### 1.4.2 Relation between collection and division and dialectic

The relation between collection and division and dialectic<sup>25</sup> is open to debate. The secondary literature identifies dialectic with collection and division in some cases, but contrasts them in others. Dorothea Frede, for example, states that while dialectic as described in the *Republic* is useful for arriving at definitions, the method of collection

---

<sup>25</sup> Here using Ackrill's definition of 'dialectic' as "the study of the interrelations of forms" (109; cf. Section 1.1 above).

and division, although purported to be a “prerequisite for dialectic proper,” is less informative (207). Philosophical investigations such as the inquiry into the nature of justice require experience and insight, these being elements of dialectic or, at least, an activity that complements dialectic. Collection and division, however, do not fare well in Frede’s view. While “orderly and methodical,” their productions are too “machinelike” and “cut-and-dried” in comparison with the results of dialectic proper and its kindred methods (D. Frede 208).

Ackrill also makes a distinction between dialectic and the method of collection and division, although his assessment of the latter is much more positive. The method of collection and division is not the same as dialectic, Ackrill makes clear, but it certainly assists dialectic. He states that “Dialectic as the study of the interrelations of forms ... still looks a good deal richer than division into kinds.” But Ackrill follows this remark by stating that the method can discover Forms that connect and divide other Forms (108). For example, there is at least “a close connection” between the method and the central argument of the *Sophist*, where dialectic is used to explore interrelationships among Forms (Ackrill 96). Here, the method clarifies interrelationships of concepts and sets the stage for further analysis. Ackrill emphasizes that only *some* interrelationships are revealed by the method, and that only dialectic can systematically study Forms in general. Nonetheless, under Ackrill’s interpretation the method is by no means irrelevant. It plays an important role in Plato’s later dialogues.

In my view, Ackrill is correct to point out a close connection between collection and division and dialectic. Whole-part reasoning sets the stage for a methodical investigation of the interrelations between Forms. For example, two Forms can be seen as

interrelated if they overlap – i.e., if they have a part in common. On the other hand, I agree with Ackrill that dialectic is a form of reasoning that is not identical to the method of collection and division. While dialectic presupposes the kind of whole-part reasoning carried out through collection and division, unlike the latter, dialectic is a procedure designed specifically for one domain of inquiry, the Forms and their interrelations.

### 1.4.3 The Role of collection

Not only is the relation of collection and division to dialectic open to debate, so is the relation of collection to division. While division divides a whole into parts, collection can be understood as the reverse process; i.e., it brings many into one. To use an example from the *Philebus*, disparate vocal sounds can be unified as a single system of speech, the alphabet. This is one reading, and the precise role and function of collection is debated in the literature. A passage in the *Republic*, “ὅς ἂν μὴ ἔχη διορίσασθαι τῷ λόγῳ ἀπὸ τῶν ἄλλων πάντων ἀφελὼν τὴν τοῦ ἀγαθοῦ ἰδέαν” (“...one not able to distinguish the form of the Good from all others...”, 534b), was a point of disagreement between Adam and Hackforth. This passage, according to Adam, “perhaps suggests the διαίρεσις, which was an essential part of Plato's dialectical method” (Adam). Hackforth disagrees. He says that division is “complementary to συναγωγή ... it involves the preliminary task of setting beside the *definiendum* a number of co-ordinate species which are ‘seen together’ (cf. συνορῶντα Phaedr. 265 D) as constituting the extension of a genus. How can the αὐτὸ ἀγαθόν be included in a συναγωγή?” (Hackforth, “Plato's Divided Line” 5). Thus, according to Hackforth, division presupposes collection, but since the αὐτὸ ἀγαθόν (i.e.,

the “good itself”) is the ultimate Form, it has no co-ordinate species and as a result it cannot be collected with anything. In this case, division has nothing to divide. Thus, for Hackforth, collection is indispensable.

In my view, Hackforth is correct when he says that collection is indispensable, but not for the reasons he gives. Hackforth presumes that collection and division operate on genus-species structures. But why must this be the case? Perhaps the Good overlaps with other Forms, in which case, the Good can be divided into aspects – e.g., if the Good has a share in Knowledge and Pleasure, then part of the Good is Knowledge, and part of it is Pleasure. In Chapter 3, two readings of the method that argue for the possibility of division into overlapping Forms or kinds will be discussed.

Some interpreters feel that collection plays a secondary role at best. Under this interpretation, Plato is mainly concerned with division, and collection is seen as an accessory method or a preliminary step contingent on the problem at hand. For example, Stenzel claims that while Plato emphasizes the interdependence of collection and division, the latter is the core component of dialectic and is the more important of the two (107).

Menn takes the opposite point of view, though he admits that it is especially difficult to clarify the concept of collection. Referring to the story of Theuth and the alphabet in the *Philebus*, Menn states, “commentators have generally been puzzled about why it should illustrate collection rather than division. Indeed, they have been puzzled about collection as such; and it has been suggested that Plato is really describing only a single method, the method of division” (292). Against a common interpretation, Menn argues that collection is not restricted to defining a species or genus within a genus-species tree. Rather, collection can be the means by which the elements of a domain can



be learned and mastered, much as children learn the alphabet. In this use of collection, the student learns each element (στοιχεῖον) by comparing its use in sets of larger complexes (Menn 299). Thus, the letter ‘α’ can be learned by comparing its use in syllables such as ‘βα’ and ‘γα’ (Menn 297). Taken together, the syllables are a collection by means of which the elements are recognized and mastered. Collection also applies to the more difficult problem of learning to decipher “the long and difficult syllables of reality” (*Statesman* 278d4-5). This involves learning not letters of the alphabet but rather ἀρχαί or “the most basic of Forms” (Menn 300).

Menn is correct: collection is not restricted to defining a species or genus within a logical tree. A part *can* be an element – there is no reason why one cannot collect together the elements of something into a whole. This is seen not only with the alphabet, but in other domains. To use another example from the *Philebus*, musical notes are not “species” but elements or aspects of musical structures. That collection is not restricted to genus-species trees will be discussed in the following section and in more detail in Chapter 3.

#### 1.4.4 Relation to genus-species hierarchies

In “Classification in the ‘Philebus’,” J. R. Trevaskis subscribes to what he calls “the commonly held opinion”: division is a means by which a genus is divided into species or kinds (39). Its limit is the level of the *infima species* – particulars “below” this level are beyond its scope (Trevaskis, “Classification in the Philebus” 39). However, in a later publication Trevaskis holds a different view. Referring to the *Statesman* 262d,

where Man is (incorrectly) divided into Greek and Barbarian, he writes, “We have a clear case here of Division proceeding below the *infima species* Man ... It seems that we have no warrant for attributing the anachronistic expression *infima species* to the lower limit of Platonic Division, and that we should not do so” (Trevaskis, “Division and its Relation to Dialectic” 127).<sup>26</sup>

Trevaskis’ latter interpretation is the more correct view. For example, Plato often talks of dividing Number into Odd and Even (Heath 292). However, the concept of *infima species* seems incompatible with the idea of Number. It seems more likely that the method can divide not only into kinds and species, but also into elements and aspects. Importantly, Trevaskis states that “it seems that we should abandon any preconception in favour of ‘specific’ differentiae. Plato is willing to see different criteria observed in different divisions, even where the same class is to be divided” (Trevaskis, “Division and its Relation to Dialectic” 128).

However, in his discussion of the *Philebus*, Letwin claims that the genus-species interpretation is common among scholars. He states, “According to this interpretation – which has been favoured by commentators such as Ross, Taylor and Hackforth – Plato is concerned to divide a given concept not into its species and aspects, but only into its species” (Letwin 194). To use Letwin’s examples, Man would not be divided into “rationality” and “concupiscence,” but into kinds such as “good men” and “bad men” (Letwin 194).

But for Letwin the distinction between species and aspect is crucial and it solves some important interpretive problems. Like Gosling, Letwin argues that to restrict the method to kinds or species contradicts Plato’s own examples of the method (Letwin 194).

---

<sup>26</sup> Chapter 3 will further discuss the limitations of the concept of an *infima species* and kindred concepts.

For example, pitch, rhythm, and measure are amenable to division because “although these are not species of sound, they are clearly aspects of it” (195). This is similar to Menn’s interpretation (discussed in Section 1.4.3 above) but not quite the same. Instead of “aspects” Menn sees “elements” (“στοιχεῖα”) in Plato’s illustrations of the method. But the general tack is the same in both cases: the method is not limited to the construction of genus-species trees. In my view, this interpretation is correct: the method is not restricted to division into species, and it can define logical structures that are not strict hierarchies.

However, some scholars continue to interpret collection and division in terms of only species and kinds. Barker argues that “the process is one of anatomising one general form or kind into a collection of subkinds, and those subkinds into still lesser kinds. There really should never have been any dispute about that, though indeed there has” (144). For Barker, a kind is a collection of sub-kinds which form a unity. Even what is typically seen as an *infima species* such as βούς (“ox”) can be divided, according to Barker: “βούς ... contains Alderney βούς, Hereford βούς, Aberdeen Angus βούς etc. as sub-kinds,” and these sub-kinds fall under broader kinds such as “ungulate, ruminant, mammal, animal, and so on” (164).

M.L. Gill disagrees. She argues that βούς is not divided into sub-kinds but into varieties based on their “accidental features” (“The Divine Method” 39). She agrees that in *some* dialogues, such as the *Phaedrus*, the method aims to divide kinds into sub-kinds. But this kind of division is *dichotomous division*, which is to be distinguished from sister methods seen in the *Statesman* and other dialogues. Dichotomous division is not the full-fledged method that Plato illustrates for more complex cases. In the *Philebus*, for example, collection and division constitute a more advanced method that aims to divide a

unity into parts and features instead of kinds and sub-kinds (“The Divine Method” 42).

The genus-species model and other interpretations of collection and division will be discussed further in Section 3.2 (pg. 158). In this section, it will be shown that the genus-species model does not capture the broad range of logical structures that can be defined through collection and division.

Debate on the relation between collection and division and genus-species trees is paralleled by debate on the objects or domains of collection and division. In other words, while the former asks what kind of structure is delineated by collection and division, the latter asks which sets of objects or elements form the content of these structures. Are collection and division applicable to physical objects, sensory data, concepts, numbers, Forms, or a combination of these? Or is it mistaken to assume that there is a real distinction between structures and the objects that form them? At the center of this debate is a question concerning Plato’s theory of Forms: are collection and division restricted to Forms, or are they more inclusive?

Trevaskis argues against the interpretation that division is essentially concerned with Forms. He points out that in the *Phaedrus*, ψυχή (“soul”) is subject to division: “... τούτων δὲ δὴ οὕτω διηρημένων ...” (“... these [i.e., kinds of soul] must be divided ...”, 271d; Trevaskis, “Division and its Relation to Dialectic” 124). Here, διαίρεσις is applied to ψυχή. But, citing the *Phaedrus* myth, Trevaskis states that ψυχή is not a Form. Therefore, this passage is “a *prima facie* case ... of Division applied outside the scheme of Ideas, and that the case needs answering by anyone who holds that Division is essentially concerned with Ideas” (Trevaskis, “Division and its Relation to Dialectic” 124). Furthermore, considering now the *Sophist*, Trevaskis raises the question of how

Ideas relate to the intermediate classes that are discovered in the course of a division. He states his point cogently: “Are we to believe, then, that Plato posited an Idea of ‘semblance-production by ignorant mimicry’? ... I find it difficult to believe that he did” (Trevaskis, “Division and its Relation to Dialectic” 125). Apparently this is a case in which the method is applied neither to Forms nor to species.

However, while it may be the case that Plato did not posit “semblance-production by ignorant mimicry” as a single Form, this concept (and similar compound expressions seen in the *Sophist*) is posited by the Eleatic Stranger, not by Plato. Moreover, the concept is not incompatible with the theory of Forms if it is understood as a community of concepts – i.e., as an interweaving of Forms. In other words, arguably, there is a Form of Production, a Form of Semblance (or similarity), a Form of Ignorance, and a Form of Mimicry (Imitation). I use the word ‘arguably’ because there is an age-old debate in the secondary literature about what may or may not count as a Form. It is well beyond the scope this work to settle such a debate. However, in the *Parmenides*, Parmenides tells young Socrates that without Forms, thinking has nowhere to turn (“οὐδὲ ὅποι τρέψει τὴν δίανοιαν ἔξει”; *Parmenides* 369b-c). If we take the claim that reasoning is not even possible without Forms seriously, then we can say that even the intermediate classifications of the *Sophist* are based on overlapping Forms. Moreover, under a similar interpretation, how we collect and divide kinds of soul is governed by Forms: e.g., if we say a soul is just, we do so based on our knowledge of Justice, if a soul is courageous, we do so based on our knowledge of Courage, and if a soul is both, overlapping Forms provide a lens through which we define the soul that is just and courageous.

However, Julius Stenzel presents a different take on the matter in his oft-cited and influential *Plato's Method of Dialectic*. Unlike Trevaskis, Stenzel believes that not only is the method tied to Plato's theory of Forms, he argues that διαίρεσις bridges the gap between Forms and particulars. Commenting on *Sophist* 235d, a key passage on the method, Stenzel argues that Plato was aiming for “*rapprochement* between individual and εἶδος, each coming to resemble the other” (99). Intuition is a “vision of the mind” that can descend from the highest εἶδος, Being, to intermediate kinds (“Patterns in the strictest sense”), and ultimately reaches its limit in the particulars (Stenzel 120 - 121). This network of Forms, kinds, and particulars is understood and articulated through διαίρεσις – it is through this process, which typically operates unconsciously, that a particular is recognized. A particular is known only through an εἶδος, without which it is indeterminate (“ἄπειρον”) (Stenzel 125). In Stenzel's view this makes διαίρεσις necessary for apprehension of both Forms and particulars. It is a central part of Plato's philosophy.

In “Pythagoras Bound: Limit and Unlimited in Plato's *Philebus*,” Kolb questions the extent to which we can distinguish between a particular object and its classification. He says that empiricist presuppositions can cause us to misinterpret passages on collection and division. Oft-cited examples such as the tradesmen who are classified by Socrates, and common objects like tables and chairs, mislead us into thinking that in general, things are first seen as individuals, then seen as members of classes (Kolb 500). The story of Theuth's discovery of the alphabet in the *Philebus* serves as a counterexample. Here, there is no clear distinction between classifying a thing and knowing it as an individual. In other words, one does not start with a “crowd of

particulars” which are classified (Kolb 501). Instead, the recognition of an individual *as* individual (e.g., the letter C apart from indeterminate sound) and the classification of the individual are processes that are inseparable and simultaneous. Kolb’s argument applies to Forms as well as to sensible particulars.

To conclude, the question as to whether collection and division produce a genus-species hierarchy rests on precisely what kind of structure is produced by collection and division. This question and the genus-species debate will be discussed further in Chapter 3. Section 3.2.5 will argue that the Fabric and Lens models (i.e., models that allow for non-hierarchical structures) more accurately describe the results of collection and division. The question as to whether collection and division also apply to particulars as well as kinds and classes will be discussed in Chapter 5, where it will be argued that collection and division are not limited to reasoning about universals.

#### **1.4.5 Criticisms of the method of collection and division**

Epicrates the comic poet parodied the method of collection and division by portraying students of the method attempting to classify a pumpkin and reaching an impasse (Lever 177). And, according to Diogenes Laertius, Diogenes the Cynic had plucked a chicken and said “οὗτός ἐστιν ὁ Πλάτωνος ἄνθρωπος” (“Here is Plato’s man”; *Lives of Eminent Philosophers*, VI.40; Page et al. 42), thus mocking Plato’s definition of man as a featherless bipedal animal.

There is some truth in these jokes, and philosophers such as Aristotle have levelled articulate criticisms against the method of division. In the *Analytics* Aristotle

argues that the method assumes what it should prove, i.e. the correct branches of a division are not deduced by way of necessary connection but merely *assumed* to be correct (G. Lloyd 156). In this sense, a definition is achieved not by deduction, but merely by a series of disjunctions, none of which involve necessary consequence. However, at *Posterior Analytics* 91b28 Aristotle claims that some of the limitations of the method can be overcome by applying comprehensive, ordered divisions to the essential attributes of the target object (G. Lloyd 156). But even in this case, although division does provide knowledge, it provides neither definition nor proof.

Tarán argues that Aristotle was targeting a variation of the method, dichotomous division, as practiced by Speusippus (396). Similarly, D.M. Balme states that Aristotle was evidently criticizing a form of the method that might have developed after Plato's dialogues were written (69). But G. Lloyd points out that “almost all” divisions that Aristotle criticizes in the *Organon*, *Metaphysics*, and *De Partibus Animalium* can be found in the *Sophist* and the *Statesman*, and so Aristotle may have been specifically targeting the method of division espoused by Plato (153 - 154).

However, as mentioned above, Aristotle does not advocate jettisoning the method in its entirety. Rather, in *Topics*, *Categories*, *Posterior Analytics*, *Metaphysics*, and *De Partibus Animalium*, Aristotle presents a modification of division based on three improvements: (1) a distinction between genus, species, differentia, property, and essential and inessential accident, (2) successive differentiation, and (3) simultaneous division by multiple differentia (Balme 69). Taken together, these are intended to overcome serious defects of the method.



Balme argues that Aristotle's purpose in *De Generatione Animalium* and *De Partibus Animalium* was not to classify animals, but to find essential differences in animal parts and to determine the *causes* of these parts (88). If Balme is correct, then it is not surprising that Aristotle would reject the method of division as described in Plato's dialogues. The latter is much more general, and it is applied to diverse areas such as sensory phenomena, numbers, and psychology (see Section 1.6.3, pg. 88). How would the ideas of essential difference and causation apply in these cases? For example, what are the essential, as opposed to accidental, differences of the natural numbers? The question seems out of place in mathematics, as does the idea of causation. The same is true for musical intervals, which seem to be better understood in terms of numerical relations rather than causation and essence.

But Balme points out other criticisms of the method, such as the apparently arbitrary order of division as described by Plato (70). This is an especially interesting criticism because Plato was very keen on order – the aim of the *Philebus*, for example, was a precise and accurate ranking of the elements of the good life. Yet the order in which collections and divisions should occur – if, indeed, order is not arbitrary – is not explained by Plato. However, in models that allow for overlapping concepts as opposed to genus-species hierarchies, relations are symmetric; e.g., the statement that *art overlaps production* is equivalent to *production overlaps art*. This is not the case when genus-species relations are being defined; e.g., *production is a species of art* is not equivalent to *art is a species of production*. These models will be compared in Section 2.2, where it will be argued that models that allow for non-hierarchical relations more accurately describe collection and division.

### 1.4.6 Conclusion

While collection and division are important to Plato's philosophy and play a prominent role in his later dialogues, there is significant disagreement on precisely what collection and division are; consequently, the secondary literature taken as a whole presents a wide spectrum of interpretations. Are they psychological processes so fundamental that thought and speech are not possible without them? Or are they techniques that can be learned and practiced only by trained specialists? Or are they components of a deductive system? There is little agreement on these questions.

In the *Phaedrus*, Socrates states that collection and division give him the ability to speak and to think (“λέγειν τε καὶ φρονεῖν”; 266b4-5). This claim should be taken seriously, and Chapters 2 and 3 will present the argument that collection and division are not restricted to the province of specialists or philosophers. In some cases, collection and division operate as a step-by-step procedure that can be learned and taught, but I will argue that in general, collection and division are commonplace and elementary. They are used to formulate definitions (even simple definitions such as *love is a kind of madness*) as well as hierarchical and non-hierarchical logical structures. Chapters 4 and 5 will show how collection and division underlie both deductive forms of reasoning, such as the syllogistic, and non-deductive (i.e., everyday) forms of reasoning.

### 1.5 Terminology

In the *Sophist*, collection and division are referred to as “ἡ τῶν λόγων μεθόδος” (227a), and this expression highlights the fact that both ‘μεθόδος’ and ‘λόγος’ are key words for understanding collection and division. In addition, ‘μεθόδος’ is closely related to another term used to describe collection and division, ‘ὁδός.’ Each of these terms, as well as related terms such as ‘logic,’ will be discussed below.

### 1.5.1 ‘λόγος’

The importance of λόγος is supported by several passages in Plato’s dialogues. For example, according to the *Statesman*, when used correctly, λόγος makes us “better dialecticians” and allows us to display the things that are (“γενόμενα τοὺς συνόντας ἀπηργάζετο διαλεκτικωτέρους καὶ τῆς τῶν ὄντων λόγῳ δηλώσεως εὐρετικωτέρους”; 287a). However, the flip side of the coin is that λόγος lends itself to abuse: sophists bewitch children through λόγος (*Sophist* 234c), those who practice rhetoric can inflame crowds by means of λόγος (*Phaedrus* 267c), and the young treat λόγος as a plaything by means of which they corrupt their parents and disseminate confusion (*Philebus* 15d-e). That Plato stressed the various ways in which λόγος can be misused explains his motivation for promoting a way of λόγος that purportedly yields clarity (*Phaedrus* 265d) if not knowledge.

In the *Theaetetus*, Socrates and Theaetetus explore the thesis that knowledge is true belief (“δόξης ἀληθοῦς”) with an account (λόγος; 206c3-4). Three definitions of λόγος are discussed (206c-210a):

1. λόγος is the ‘vocal image’ of thought (206d).
2. λόγος is a list of elements of which a whole is composed (207a) – i.e., it is a way to the whole through the elements (207c); for example, a wagon is a whole that can be understood as wheels, axle, body, rims, yoke, etc. (207a).
3. λόγος is a distinguishing mark or characteristic (208c). For example, Theaetetus is distinguished through his snub nose (209c); the sun is the brightest body in the heavens (208d).

The first definition is dismissed because while being a vocal image of thought may be an aspect of λόγος (206d), it does not tell us how λόγος (whether as speech or thought) can yield knowledge in conjunction with true belief (206d-e). The second definition fails because command over the elements of a whole is possible without knowledge of the whole (207a-208b). The third definition fails because it is circular: if we have to know the individual and know how he or she differs from other individuals to begin with, then we already have knowledge and λόγος would be superfluous (209b-210a).

The illustrations of collection and division do not articulate a theory of knowledge, but rather a method of reasoning that may or may not yield true belief. However, the second and third definitions of λόγος in the *Theaetetus* are useful because they tell us about features or aspects of λόγος that are relevant to collection and division.

The second definition is relevant to collection and division because it states that λόγος is a way to the whole through the elements (“διὰ στοιχείων τὸ ὅλον περᾶναντα”; 207c3-4). As will be discussed in Section 1.5.3 (pg. 74), collection and division can be

understood as a way of articulating parts and wholes. A key difference is that in the *Theaetetus*, it is the elements – i.e., indivisible parts that can only be named and perceived – that serve as the way to the whole (208c), while in collection and division, it is often overlapping and divisible parts that define a whole. However, while collection and division apply to parts, not necessarily indivisible parts, understanding the parts of a whole – whether elements or complex parts – is one way to define or map out a whole, one way to form a belief or judgment about it. That something can be understood through its parts is emphasized at *Theaetetus* 205c, where it is stated that no λόγος (i.e., no account) can be given of the elements because they are incomposite – i.e., they lack parts.<sup>27</sup>

The third definition of λόγος is relevant because the examples used to illustrate the definition tell us that λόγος not only concerns universals but also individuals. Here, two examples used to illustrate the notion that λόγος is a mark by which a thing is distinguished are the following: (1) the sun is the brightest of bodies that move round the earth in the heavens (208d), and (2) Theaetetus is an individual with a particular snub-nose and other characteristics (209c). It is noteworthy that not only kinds are the subjects of knowledge, but individuals such as the sun and Theaetetus. It would have been equally permissible to speak of how species or kinds can differ from one another, but instead, the emphasis here is on how individuals differ. Thus, λόγος applies to both universals and individuals, and it will be argued in Chapter 5 that this is also true of collection and division.

---

<sup>27</sup> “Μέμνησαι οὖν, ὦ φίλε, ὅτι ὀλίγον ἐν τῷ πρόσθεν ἀπεδεχόμεθα ἡγούμενοι εἶ λέγεσθαι ὅτι τῶν πρώτων οὐκ εἶη λόγος ἐξ ὧν τᾶλλα σύγκειται, διότι αὐτὸ καθ’ αὐτὸ ἕκαστον εἶη ἀσύνθετον...” (205c4-7)

In passages on collection and division, λόγος can be understood in one of two ways. First, λόγος is understood as something that is discovered – i.e., it is treated as the object of a search. For example, the *Philebus* states that the goal or destination of the method of collection and division is “τὸν λόγον ἀνευρεῖν” (16b). This expression is translated as “the goal of our argument” (Henderson, *Philebus* 219), “to show us a better solution to the problem” (D. Frede in Plato 404), and “finding a better way ... to conduct the argument” (Gosling 6). Taking the infinitive “ἀνευρεῖν” into account, however, this expression indicates that λόγος is discovered. What λόγος refers to in this case is unspecified, but the implication is that we reason our way to something – perhaps a definition or account – that is hidden, and Socrates presents a method or way (i.e., a “ὁδὸς”) to do this. A similar picture of the method is presented in the *Sophist*, where the “λόγος” of the angler is finally grasped (“εἰλήφραμεν”) at the end of a search, and as a result an account or definition of the angler is discovered (221b). Thus, in both the paradigmatic illustration of the method in the *Sophist* and at *Philebus* 16b, “λόγος” is understood as the goal or endpoint of collection and division.

When ‘λόγος’ is used to refer to the result of collection and division as described in the preceding paragraph – i.e., when ‘λόγος’ is treated in an objective sense, as something to be found or produced – ‘account,’ ‘characterization,’ or ‘definition’ will be used to translate this word. In this case, ‘λόγος’ can also be considered as a logical framework. A logical framework is a definition or account produced by collection and division that can serve as the basis for other forms of reasoning. The construction of frameworks through collection and division will be discussed further in Chapter 2, where it will be argued that three operations are at work when a framework is produced.

When ‘λόγος’ is used to stand for an activity – i.e., when the term is used in the sense of thinking, speaking, or reflecting – it will be translated as “reasoning.” This term is broad enough to reflect the wide scope of collection and division, and it reflects the fact that collection and division are an activity and a form of thought and discourse.

To return to the first sense of the word, in general, there are two ways of understanding ‘λόγος’ as a definition. Under one reading, ‘λόγος’ in this sense is understood as a statement of the essential characteristics of the target being defined – i.e., it is a “definitive” account in the modern sense of the word. Under a different reading, ‘λόγος’ is understood as one of multiple ways of indicating or characterizing the target being defined. This reading of the term is summarized by M.L. Gill in her discussion of the *Sophist*:

The sophist is not unique in his tendency to turn up in many different places. Any object, including very simple ones, can do the same, because people experience the same thing in different ways and so have different conceptions of it. Whereas most people share the same conception of an angler, because he engages in a single observable activity, they may well have different views of complex things which engage in several activities. Some conceptions may capture the entity by a feature or activity essential to it, but many others will capture it in some accidental way. Division does not itself guarantee that one attends to essential features ... Plato’s late dialogues investigate complex and controversial kinds, and disputes about them cannot be readily settled (“Division and Definition” 179-180).

Other commentators, such as J.M.E. Moravcsik, argue similarly, and this understanding of ‘λόγος’ will be discussed further in Section 3.2.2 (pg. 162). For the purposes of this study, ‘λόγος’ as ‘definition’ should be understood in the latter sense; i.e., it implies that there is more than one possible account or characterization of the target being described.

### 1.5.2 ‘μέθοδος’ and ‘ὁδός’

The term ‘μέθοδος’ derives from ‘ὁδός’ (Liddell and Scott 1091; Beekes 1047). The latter term signifies ‘road,’ ‘way,’ ‘traveling,’ and ‘journey’ (Liddell and Scott 1199) and it occurs more frequently in Plato’s writings.<sup>28</sup> In “Division and Definition in Plato's *Sophist* and *Statesman*,” M.L. Gill explains the importance of the terms ‘μέθοδος’ and ‘ὁδός’:

The word ‘method’ itself—μέθοδος—calls attention to the route (ὁδός) we take in our enquiry. The *Sophist* and the first part of the *Statesman* represent the search by means of an elaborate system of branching roads. We travel down these roads; at each fork we must choose which branch to take in the hopes of finding our quarry, and that quarry alone, at the terminus (172).

This observation is correct: not only is ‘ὁδός’ the etymological root of ‘μέθοδος,’ but both terms are used in the dialogues to describe a network of branching roads. It will be argued in Section 3.2.5 (pg. 173) that the image of branching roads is a useful way to represent the structures defined by collection and division because they describe structures more elaborate than genus-species trees.

It is important to note that the word ‘μέθοδος’ does not always connote a rule-based procedure akin to modern-day scientific methods. More specifically, the μέθοδος of collection and division is not a prescription for reasoning that will necessarily lead to knowledge. Rather, collection and division share an affinity with the way of inquiry described in the *Timaeus* (29b-d) that yields a plausible story (“εἰκῶς λόγος”; *Timaeus*

---

<sup>28</sup> The *Thesaurus Linguae Graecae* lists 86 instances of ὁδός and 26 instances of ‘μέθοδος’ (including their declensions) in the Platonic corpus.



29c) on the one hand, and with the Way of Opinion described in the poem of Parmenides on the other. These ways of reasoning may be contrasted with strict procedures that are designed to yield scientific knowledge (ἐπιστήμη). The contrast between these methods is described by Robert Bolton as follows:

Plato is telling us, in effect, that the likely story in the *Timaeus* is not to be understood as science (*epistēmē*) as he himself understands it, but rather as the result of another *methodos*, parallel in certain respects to what Parmenides had already offered as a likely story not satisfying the standards for strict science or knowledge, in his Way of Opinion (B8.60) (105).

This is not to say that the μέθοδος of collection and division is to be equated with the forms of inquiry described in the *Timaeus* and the poem of Parmenides. Rather, the point is that these three forms of inquiry share a key property: they provide a means to perform a search that yields belief or judgement as opposed to knowledge (ἐπιστήμη). In other words, they produce results that are defeasible. This is one reason why, for example, the definition of the sophist is revised six times before a final definition is reached; while the method of collection and division does provide a route or way to a definition – a definition that *may* be truthful – there is no guarantee that the definition is correct. For this reason, the method of collection and division often provides a series of routes or ways to multiple definitions, with each definition along the way to the final result subject to scrutiny and revision.<sup>29</sup>

Regardless of the truthfulness or lack thereof of the end result of the method, collection and division provide a means to *search for* or *pursue* the target to be defined.

---

<sup>29</sup> In Chapter 2 I will argue that collection and division comprise three operations through which reasoning moves forward, step-by-step, toward a definition. However, these operations in and of themselves, while providing a way of reasoning that leads to a definition, do not guarantee a correct conclusion.

This is reflected in the meaning of the word ‘μέθοδος’: definitions of the term include “following after, pursuit” and “pursuit of knowledge, investigation” (Liddell and Scott 1091). These overlapping meanings highlight one of the primary images of the method in the *Sophist*: much of the dialogue is a pursuit for a quarry, the dialogue’s namesake. The definition “following after, pursuit” likens the method to a kind of hunting, in which something is gradually entrapped in a series of narrowing enclosures. Commenting on the search for the sophist, Notomi states “The image of hunting and escaping has been predominant in the inquiry into the definition of the sophist, and associated especially with the method of division: the inquirers trace the species of the sophist in each branch of the division, and try to find and capture him in his proper species” (164). Incidentally, this indicates that the employment of the method in the *Sophist* is a display of irony: it is the sophist who is supposed to be the hunter (222b), yet the method as it is applied in this dialogue presents the Eleatic Stranger, the practitioner of the method, as a hunter who hunts the sophist. In Section 3.3, these two perspectives are explored further: the “hunter” can be understood as a practitioner of the method of collection and division, while the “hunted” can be understood as one who is defined by the method – i.e., the “target” of the method. These correspond to two different perspectives by which a framework can be understood.

In the *Philebus* Socrates describes the method as a “ὁδός”: “οὐ μὴν ἔστι καλλίων ὁδός οὐδ' ἂν γένοιτο ἧς ἐγὼ ἐραστῆς μὲν εἰμι αἰεί, πολλάκις δέ με ἤδη διαφυγοῦσα ἔρημον καὶ ἄπορον κατέστησεν.” (“there certainly is no better road, nor can there ever be, than that which I have always loved, though it has often deserted me, leaving me lonely and

forlorn.”<sup>30</sup>; 16b). Fowler (Henderson, *Philebus* 219), Frede (Plato 404), and Gosling (6) translate “ὁδός” as “road” or “way,” and Hackforth translates it as “method” (*Phaedrus* 23). Hackforth’s translation is not far removed from the others: as explained above, the Greek word for ‘method,’ ‘μέθοδος,’ derives from ‘ὁδός,’ and when Plato describes the method as “ἡ τῶν λόγων μεθόδος” at *Sophist* 227a, he is using terminology similar to that of *Philebus* 16b. Collectively, ‘ὁδός’ and ‘μέθοδος’ paint the image of a path or way by which one can pursue a goal or travel to a destination. More specifically, collection and division can be understood as “ways of reasoning” (“ἡ τῶν λόγων μεθόδος”, *Sophist* 227a) that allow one to acquire intelligence and give one the capability of thought and speech (*Sophist* 227b, *Phaedrus* 266b).

To conclude, the image of a road (ὁδός), which is central in the illustrations of collection and division in the dialogues, is an integration of space and time: a road is both a place and a journey; it connotes both structure and movement. Collection and division can be understood as both a movement of thought – i.e., as a process of inquiry – as well as a form of reasoning in which a static whole is articulated into clearly defined parts, each fixed in its own place.

### 1.5.3 ‘logic’ and ‘framework’

Our English word ‘logic’ ultimately derives from ‘λόγος,’ and in many ways collection and division constitute a basic form of logic. It is noteworthy that ‘λόγος’ derives from the word ‘λέγω,’ which means “to collect, gather” as well as “to count, recount” (Beekes 1:841), and a derivative of ‘λέγω’ is ‘λογή,’ the Greek word for

---

<sup>30</sup> Translated by H.N. Fowler (Henderson, *Philebus* 219)

“reasoning, way” (Beekes 1:841).

According to some commentators, before Aristotle promoted the syllogism, the method of division was the only system of logic known to the Greeks. Commenting on Aristotle’s criticism of the method of division, Cherniss states the following: “the fact that Aristotle thought it necessary after having outlined his own system of logical proof to refute the pretensions of the method of diaeresis and that method alone, indicates that the latter was the only systematic ‘logic’ with which at this time the field had to be disputed” (*Aristotle’s Criticism of Plato* 30).

In fact, the same kind of reasoning seen in collection and division – i.e., reasoning in terms of wholes and parts – plays a prominent role outside of Plato’s dialogues, for instance in the works of Archytas. Not only was Archytas an important mathematician in his own right, he was also an associate of Plato and there are significant parallels in their work. More specifically, Huffman argues that there are similarities between division and Archytas’ mathematical procedures. For example, both Plato’s *Philebus* and Fragment 1 of Archytas start with *sound* as a unity and divide it into high and low pitch, the result in both cases being a division of scales (Huffman 90). Huffman also points out that there are parallels between Plato’s description of collection and division in the *Phaedrus* and the concept of “the nature of the whole” found in the works of Archytas and Hippocrates of Cos (89).

Thus, the systematic application of the fundamentals of collection and division – i.e., of reasoning in terms of wholes and parts – is seen not only in Plato’s dialogues, but also in the works of ancient mathematicians such as Archytas. This is additional evidence in support of Cherniss’ claim that division was considered to be a system of logic

comparable to the syllogistic.

However, Cherniss' claim raises the question as to what logic is. For better or worse, this question is difficult to answer because there is no consensus on the definition of 'logic.' Even a general characterization of logic, according to some, is beyond our grasp. For example, in his article, "What is Logic?" Ian Hacking states, "It is not to be expected that logic can be or should be characterized to everyone's satisfaction, for the subject is too ancient, its workers too active, and its scope too vast for that" (285). In the same article, Hacking specifies the following problem: "... as Tarski had earlier implied, there is no delineation of the logical constants. We can at best list them. It is as if we could characterize the concept planet of the sun only by reciting Mars, Venus, Earth, etc., and could not tell by any general principle whether the heavenly body epsilon is a planet or not" (287). Nonetheless, contemporary logicians do provide definitions, even if very general ones; for example, Graham Priest states that "logic is the investigation of the right way to reason" ("Entrevista – Graham Priest" 167-168). The advantage of Priest's definition is that it is broad enough to include the various forms of logic that have been studied over the centuries, and it emphasizes the connection between logic and reason, a connection that, as will be explained below, was made explicit in ancient Greece.

For the purposes of this study 'logic' is to be understood broadly as a *way of reasoning* that is oriented toward a goal or endpoint. More specifically, logic is a way of reasoning in which a series of steps is taken for the purpose of reaching a statement that, *if* the correct steps are taken, is true. This definition is broad enough to include ancient conceptions of λόγος as a form of reasoning, yet narrow enough to exclude thinking that is aimless or circular. It is possible for the latter to arrive by chance at a true statement,

but the goal of taking the right steps and tracing out a path that leads to truth is lacking. Conversely, logical inference may arrive at a false conclusion (e.g., even a valid argument with false premises can yield a false conclusion), but a false conclusion in itself does not determine whether thinking is logical or not. The importance of attempting to reach a true conclusion is an aspect of reasoning that is lacking in aimless or stream-of-consciousness thinking, and it is movement directed toward a correct conclusion that distinguishes collection and division from other forms of reasoning.

Thinking that reaches an endpoint is described by Plato at *Theaetetus* 189e-190a. Here, in response to Theaetetus, Socrates explains what he means by “thinking” (“διανοεῖσθαι”):

ΣΩ. Λόγον ὄν αὐτὴ πρὸς αὐτὴν ἢ ψυχὴ διεξέρχεται περὶ ὧν ἂν σκοπῇ. ὥς γε μὴ εἰδῶς σοι ἀποφαίνομαι. τοῦτο γάρ μοι ἰνδάλλεται διανοουμένη οὐκ ἄλλο τι ἢ διαλέγεσθαι, αὐτὴ 190 (a) ἑαυτὴν ἐρωτᾶσα καὶ ἀποκρινομένη, καὶ φάσκουσα καὶ οὐ φάσκουσα. ὅταν δὲ ὀρίσασα, εἴτε βραδύτερον εἴτε καὶ ὀξύτερον ἐπάξασα, τὸ αὐτὸ ἤδη φῆ καὶ μὴ διστάζει, δόξαν ταύτην τίθεμεν αὐτῆς. (189e6-190a4)

Socrates: A talk which the soul has with itself about the objects under its consideration. Of course, I’m only telling you my idea in all ignorance; but this is the kind of picture I have of it. It seems to me that the soul when it thinks is simply carrying on a discussion in which it asks itself questions and answers them itself, affirms and denies. And when it arrives at something definite, either by a gradual process or a sudden leap, when it affirms one thing consistently and without divided counsel, we call this its judgment. So, in my view, to judge is to make a statement...<sup>31</sup> (189e-190a)

Here, Socrates is describing a particular kind of thinking. This is thinking that is not simply a series of unanswered questions, nor is it a series of thoughts that lack well-defined endpoints (as one might see in stream-of-consciousness or incoherent talk). Nor

<sup>31</sup> Translated by M.J. Levett, revised by Myles Burnyeat (Plato 210).

is it circular thinking, where the soul recycles the same series of thoughts without limit. Instead, this kind of thinking is a talk – i.e., a λόγος – comprising a series of affirmations and denials that ends when a determination has been made (“ὅταν δὲ ὀρίσασα”).

The point of arrival is a statement that may or may not be true (it is a judgment, not a proven statement), but it serves as a conclusion – i.e., a limit or endpoint, a destination at which the reasoning process comes to rest, even if momentarily. A similar description of thinking that reaches an endpoint is given at *Sophist* 264a-b, where thinking is the soul’s conversation with itself, and belief the conclusion of thinking.

Collection and division constitute a series of steps in which an endpoint – a definition or classificatory scheme – is reached, and given the definition of logic given above, collection and division can be understood as a form of logic. In other words, collection and division can be distinguished from other forms of thought because when they are applied, they are directed toward a conclusion. The conclusion is a judgment or belief (i.e., a λόγος) that serves as a definition.

This is not to say that collection and division always arrive at the truth – in fact, often the end-result is defeasible. We see this in the *Sophist*, for example, where definitions are repeatedly tested and revised until a final, seventh definition is reached. Moreover, collection and division can be *misused* to reach a tentative definition that is presented as a true and conclusive answer. Similarly, an invalid or unsound deduction, or a weak induction can be used to deceive one’s audience. Nonetheless these are forms of logic.

There is a counter-argument to the claim that collection and division constitute a form of logic. It can be argued that collection and division depend on the semantics or

meaning, not the logical structure, of the particular object being collected or divided.. For example, when Man is divided into Male and Female (*Statesman* 262e), the division is based on knowledge of what Man is. In other words, it is the semantics of the word ‘Man,’ as opposed to an abstract logical structure, that determines how Man is divided. Since this is the case, collection and division are not logical operations but simply the analysis of a concept, the analysis being determined by the meaning of the concept.

However, the same argument holds for mathematical operations. Consider mathematical division: we divide five in half, for example, using our knowledge of what ‘five’ refers to: i.e., we have to know, among other things, that five is an odd number, and so our division of this number will differ from that of an even number. Even though this is the case, we can still speak of division as a *mathematical* operation. Similarly, when logical division is applied to Man, the particular result will depend on our knowledge of the concept Man, just as the particular result of dividing a number depends on our knowledge of that particular number.

Moreover, even apart from the semantics of the particular object being divided, in general, the result of logical division is always the same: a conceptual whole is divided into two or more parts. It does not matter which whole is being divided, when it is divided, the division yields parts, each of which is related to the whole and to each other. This is an inferential “step” in the sense that one concept is succeeded by a set of other concepts, and in every case these concepts are interrelated. In fact, any division can be expressed as follows:

If a whole **a** is divided, then there are at least two parts **b** and **c** such that **b** and **c**



are parts of **a**.<sup>32</sup>

This raises the following questions: what does the term ‘part’ mean, as opposed to related terms such as ‘kind’ or ‘species?’ Why even use the term ‘part’ at all? In answer to the first question, in this study ‘part’ is a general term that encompasses more specific terms such as ‘kind,’ ‘species,’ and ‘aspect.’ For example, to say that love is a kind of madness is also to say that love is a part of madness, but the reverse is not necessarily the case because the term ‘kind’ is more specific than the term ‘part.’ The second question is related to the first and it is especially pertinent because Plato often speaks of kinds (γένος) rather than parts. Thus, considering the division of the *Phaedrus*, it makes sense to say that love is a *kind* of madness. If this is the case, why make this more abstract? There are at least two reasons. First, the terminology of parts occurs frequently in the illustrations of collection and division.<sup>33</sup> Second, a division does not always yield a kind. In many cases, the result of division is not a kind or species. Thus, the letter ‘a’ is a part of speech, but not a kind of speech in the sense that ‘vowel’ and ‘consonant’ designate kinds. Commentators such as Menn have pointed out that a part of a whole is not necessarily a species or kind: mutes, for example, are a part of sound, but they are not a kind of sound (see Section 1.2.4, pg. 38). Thus, the word ‘part’ may refer to a kind, a species, an aspect, or, more generally, any one of a set of components of which a whole is comprised.

---

<sup>32</sup> This is expressed at *Parmenides* 144d as “Καὶ μὴν τό γε μεριστὸν πολλὴ ἀνάγκη εἶναι τοσαῦτα ὅσαπερ μέρη.” (“Furthermore, a divided thing certainly must be as numerous as its parts.”; Plato 378). *Parmenides* 144e states that the parts are parts of a whole.

<sup>33</sup> According to the *Thesaurus Linguae Graecae*, ‘μέρος’ and its declensions occur 29 times in the *Sophist* alone.

Given the definitions of the terms ‘logic’ and ‘part’ above, the term ‘logical framework’ is defined as follows: a logical framework is a structure in which a whole and its parts serve as the means by which reasoning can move to an endpoint. More specifically, a logical framework comprises named parts that are unified into a structure which provides the means for reasoning to move step-by-step toward a conclusion. To clarify using an example, consider the division of Number into Odd and Even in the *Statesman* (262c -263a; see Appendix A 25). Number and its two parts, Odd and Even, constitute a logical framework because they define the steps by which one can reach a conclusion. To use a simple example, one can start with the concept for Even and conclude in one step that Even is a part of Number. One can then use this conclusion as the starting point of another line of reasoning: e.g., since some numbers are prime, perhaps some even numbers are also prime. Or, one might start with a particular number and given the parts of Number as a whole, try to determine whether it is odd or even: the relations between Number, Odd, and Even provide the basis – i.e., the underlying framework – for this form of reasoning. While this may be a simple form of reasoning, the fact that it is simple is crucial: it explains why Socrates would make the claim that collection and division give him the ability to speak and to think (see Section 1.6.3, pg. 88).

In short, whole-part relations defined through collection and division serve as the means by which steps are made so that reason can reach an endpoint. These whole-part relations are structures – in other words, frameworks – that underlie thinking that is directed toward a conclusion. Whether they are simple structures or not is irrelevant: the fact that thinking can be structured is the key point.

Given the definition of ‘logic’ above, the formulation of a framework or definition, too, is a form of thinking that is logical. It will be argued in Chapter 2 that seeing, naming, and placing are operations that act as “steps” that ultimately yield a framework. So, a framework produced by collection and division is ‘logical’ in two ways: first, a framework is the product of logical thinking: reasoning moves step-by-step through three operations to arrive at an endpoint, the framework itself. This framework can then serve as a starting point for step-by-step reasoning to reach a conclusion. To clarify, consider as an analogy the construction of a geometric figure. When constructing the square in the *Meno*, for example, we can say that Socrates is reasoning mathematically by using principles of geometry to perform his construction. After the square is constructed, when Socrates and the slave boy manipulate and eventually double the square, they are also reasoning mathematically by applying their knowledge of geometry to understand and manipulate the parts of a square. Thus, the completed square serves as a ‘framework’ upon which further mathematical reasoning moves. An even simpler case is the construction of a line-segment: two points are placed and a line is drawn between them. Using knowledge of elementary concepts of geometry (all the more important for being elementary), one has already completed a structure – a minimal structure to be sure, but a structure nonetheless. One can then manipulate this simple structure: one can divide it into two or more smaller segments, one can conclude that there is only one straight line between two points, etc. In short, behind the seemingly “simple” statements such as ‘Number divides into Odd and Even,’ or ‘letters are parts of speech’ lie great discoveries, and Plato was pointing out that behind the seemingly simple relations that are taken for granted there is a form of thinking that is of fundamental

importance.

## 1.6 Origin, purpose, and scope of collection and division

The purpose of this section is to provide an overview of collection and division by discussing the method's origin, purpose, and scope. It will be argued that collection and division in their simplest forms pre-date the later dialogues, they serve as a means of inquiry, learning, and teaching, and that they are applicable in a wide range of areas.

### 1.6.1 Origin

In *Plato's Individuals*, M.M. McCabe states that "Plato insists, in several of the later dialogues, that he has discovered a new and stunning 'method' of dialectic: collection and division" (258). But nowhere in the dialogues does Plato claim that he has discovered the method of collection and division. On the contrary, in the *Philebus*, Socrates refers to the method as follows: "θεῶν μὲν εἰς ἀνθρώπους δόσις, ὥς γε καταφαίνεται ἐμοί, ποθὲν ἐκ θεῶν ἐρρίφη διὰ τινος Προμηθέως ἅμα φανοτάτῳ τινὶ πυρί." ("A gift of gods to men, as I believe, was tossed down from some divine source through the agency of a Prometheus together with a gleaming fire."<sup>34</sup>; 16c). The next sentence elaborates on this observation: the method was handed down from the ancients (παλαιοί; 16c) who were better than Socrates and his contemporaries. This may be one reason why Socrates is often left in a state of puzzlement when he attempts to employ the method

---

<sup>34</sup> Translated by H.N. Fowler (Henderson, *Philebus* 221)

(16b): collection and division were well understood by the ancients, but apparently they have become something of a lost art by the time of Socrates. In the same passage of the *Philebus* (16c), Socrates also states that it is through the way (ὁδός) of collection and division that all the discoveries of the arts are made (“πάντα γὰρ ὅσα τέχνης ἐχόμενα ἀνηυρέθη πόποτε διὰ ταύτης φανερά γέγονε”). Commenting on this remark and a similar statement by Socrates at *Phaedrus* 266b, Hallvard Fossheim states the following:

This is an extraordinary thing to say, and one which creates enormous difficulties for anyone wanting to claim that Plato is here expounding on some specialized method. The way in question does not constitute anything *new*, but something which has been around at least since the dawn of civilized society ... it should therefore not be thought of as anything like a radical innovation developed only in the late Platonic dialogues. What the *Philebus* lets us take away concerning collection-and-division is, on the contrary, that it constitutes an aspect of understanding which is all-pervasive (34).<sup>35</sup>

Other commentators have made similar observations. For example, Guthrie states that “Evidently the method of definition by division, exemplified in the *Sophist* and *Statesman*, was not a new departure, but a technical elaboration of something with which

---

<sup>35</sup> It is important to note that Plato was well aware of the fact that the Greeks did not have a monopoly on great discoveries in the arts and sciences. For example, at *Phaedrus* 274c, Socrates credits the invention of number, arithmetic, geometry, astronomy, draughts and dice, and letters to the Egyptians. This is not to say that in actuality the Egyptians had a monopoly on innovation; the Babylonians and other ancient civilizations also paved the way. The gist of *Phaedrus* 274c is that Socrates recognizes that the Greeks had inherited powerful devices of reasoning, at least some of them deriving from the Egyptians. Moreover, claims in the dialogues about the Greek’s predecessors do have a basis in historical fact. Recent commentators such as Stephen Menn have stated that “in modern scholarly opinion, the invention of alphabetic writing was roughly as Plato describes it” in the *Philebus* (298), and that “what is logically required at each stage in the development of a writing-system is something much like the process of collection that Plato ascribes to Theuth” (299).

As for division in general, an important connection between ancient Greece and Egypt, and between Plato and earlier thinkers, is the idea that a unit can be divided into parts. This was expressed mathematically by both civilizations as the unit fraction (i.e., a fraction in which the numerator is one). Knorr observes that the manipulation of unit fractions “dominates the computations with fractions found in the ancient Egyptian papyri ... and despite the passage of over two millennia is still to be found in late Greek papyri from the Graeco-Roman and Byzantine periods” (134). Knorr emphasizes that sources that affirm Greek and Egyptian continuity in mathematics must be taken seriously (135). He states, “the Greek papyri are best viewed as an extension of the Egyptian tradition.” (159).

Plato was familiar from the beginning” (5: 27). It is worth emphasizing that the method of collection and division as described in the *Sophist* and the *Statesman* is an *elaboration*, and an understanding of what is being elaborated – i.e., collection and division in their simplest forms – is an important, if not necessary, subject of inquiry in its own right.

### 1.6.2 Purpose

According to the *Philebus*, the purpose of the method is to enable one to inquire, learn, and teach. At *Philebus* 16e, Socrates states “οἱ μὲν οὖν θεοί, ὅπερ εἶπον, οὕτως ἡμῖν παρέδοσαν σκοπεῖν καὶ μανθάνειν καὶ διδάσκειν ἀλλήλους” (“The gods, then, as I said, handed down to us this mode of investigating, learning, and teaching one another”<sup>36</sup>). The key words in this passage are ‘σκοπεῖν’ (*to inquire*), ‘μανθάνειν’ (*to learn*), and ‘διδάσκειν’ (*to teach*), and they reveal a great deal about the method’s role and purpose.

The term ‘σκοπεῖν’ is translated as “inquiring” or “inquire” (Gosling 7, Plato 404), “investigating” (Henderson, *Philebus* 221), and “enquiry” (Hackforth, *Examination of Pleasure* 24). Some of its meanings are visual: among the meanings listed by Ast for ‘σκοπῶ’ are *video* and *specto* (254), and its definitions include “examine, inspect” and “look to or into” (Liddell and Scott 1614). In Plato’s dialogues ‘σκοπῶ’ and its derivatives occur frequently,<sup>37</sup> and it is not always used in reference to sensible objects. It is often used to refer to the activity of inspecting a concept for “parts” that at first sight

---

<sup>36</sup> Translated by H.N. Fowler (Henderson, *Philebus* 221).

<sup>37</sup> The *Thesaurus Linguae Graecae* lists 237 instances of ‘σκοπεῖν’ and ‘σκοπεῖ’ alone in the Platonic corpus.

are hidden. For example, in the *Sophist*, the concept *belief-mimicry* (δοξομιμητική) is inspected (σκοπέω) as if it were a piece of iron until its internal structure is discovered (267e-268a). The activity of inspecting a whole for parts corresponds to the operation of *seeing*.

The term ‘μανθάνειν’ is translated as “learn” or “learning” (Fowler in Henderson, *Philebus* 221; Hackforth, *Examination of Pleasure* 24; D. Frede in Plato 404; Gosling 7). This term reinforces the idea that the method is a way of learning – i.e., it provides a path or road that leads from ignorance to discovery. The image that comes to mind is that one begins in a state of ignorance or puzzlement and progresses to a clarification if not knowledge and discovery. Definitions of ‘μανθάνειν’ include not only “learn” but also “perceive, remark, notice” (Liddell and Scott 1079), and Ast lists *percipio* as one of its meanings (277). Thus, both ‘σκοπεῖν’ and ‘μανθάνειν’ imply looking and perceiving. Given the uses of ‘σκοπεῖν’ by Plato discussed above, this does not necessarily imply that sense-perception of empirical phenomena is involved. An intellectual seeing – e.g., when one “sees” a mathematical object such as a number or a geometric figure – may be involved. In addition, the visual senses of ‘μανθάνειν’ reinforce the description of the method at *Phaedrus* 265d, where the word ‘συνορῶντα’ (“with seeing”) is used to describe collection (see Section 2.2.1.2, pg. 105). Thus, both ‘μανθάνειν’ and ‘σκοπεῖν’ emphasize the role of seeing – whether intellectual or perceptual – in the method. The importance of seeing in collection and division will be discussed further in Section 2.2.1 (pg. 103).

The word ‘διδάσκειν’ is usually translated as “to teach” (D. Frede in Plato 405; Fowler in Henderson, *Philebus* 221; Gosling 7; Hackforth, *Examination of Pleasure* 24).

This term complements ‘μανθάνειν.’ Collection and division are not only a way of reasoning, but a means by which one can teach others how to reason. In the *Sophist* and the *Statesman*, for example, the Eleatic Stranger does not simply formulate definitions, he teaches his interlocutors how to collect and divide correctly; in other words, he teaches his interlocutors how to discern resemblances and differences. Section 2.3.1 (pg. 135) will explain that since one of the purposes of collection and division is to teach, it relies on images and representations to clarify and illustrate the target being defined.

In her discussion on the *Sophist* and the *Statesman*, M.L. Gill states that reflection on mistaken divisions ultimately leads the inquirers to a solution, and that both dialogues are “philosophical exercises” (“Division and Definition” 198). She states that mistakes as well as correct moves demonstrate how to investigate kinds through the practice of division (Gill, “Division and Definition” 198). In my view, Gill’s interpretation is correct, and collection and division are not to be understood as a procedure governed by strict, detailed rules or as a method of proof. Trial and error and the opportunity to make mistakes and question oneself are the method’s strong points as well as its limitations. In short, if the method of collection and division were infallible – i.e., *if* there were precise rules by which collection and division could be employed so that they always led to a correct result, it would be so to the detriment of its educational value. The method makes us better thinkers by making us question appearances, so that by questioning we may learn that that which appears to be similar is actually different, and that which appears to be different is actually similar. Often when we question, we hypothesize something that is incorrect, and it is only after considering our hypothesis that we realize a mistake was made, and we return to the beginning and try again, only this time having



learned from our mistake, and trying anew. The geometry lesson in the *Meno* is an adequate parallel: Socrates could have simply had the slave boy memorize the rules for doubling a square, in step-by-step sequence. Instead, he questions him, and lets him make errors. The boy then learns that *despite* appearances, doubling the side of a square does not double its area (82b-85b). He learns through trial and error what the correct approach is – he learns how to look for hidden structures behind the appearances.

### 1.6.3 Scope

As discussed in the literature review above, the scope of collection and division is debatable. In the dialogues, it is not immediately evident whether the method applies only to genus-species structures, for example, nor is it clear whether the method applies to sensible individuals as well as Forms. Considering the illustrations of collection and division in the *Phaedrus*, the *Sophist*, the *Statesman*, and the *Philebus* as a whole, there are three ways in which collection and division may be understood:

1. Collection and division are rare: in their true forms they are as common as the discovery of new ideas and the formulation of new names and classifications. In other words, they are as unusual as the discovery of the alphabet or the first division of Number into Odd and Even. They require a great deal of insight, if not wisdom, whenever they are employed. This is the impression given by the illustrations in the *Philebus*: it was a god or demigod who was wise enough to use the method to discover the alphabet (18b5-18d2; see Appendix A 49).

2. Collection and division are uncommon: they require long-term, deliberate effort, but they can be taught to those who are willing to learn. In other words, they require the methodological application of a procedure as exhibited in the *Sophist* and the *Statesman*. Collection and division can be taught and applied in the way that most techniques can, but they are beyond the ken of everyday reasoning. This is indicated by a passage in the *Statesman* (277e-278c) where through careful schooling children are taught how to recognize letters of the alphabet through collection (see Section 1.4.3, pg. 54).

3. Collection and division are common: through them reasoning of an everyday sort is possible, and they do not always require specialized knowledge of a procedure. For example, wherever two concepts are brought together and unified into a single statement, collection and division are at work. This is indicated by the *Phaedrus*, where it is stated that collection and division give us the ability to “speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b).

This study will argue for the third interpretation. Collection and division are broad in scope, and in their most basic form – i.e., when they are not applied as part of a rule-based procedure – they serve as a common way of reasoning that underpins thinking and speech in all domains of discourse. In other words, collection and division do not require specialized training, and they are not restricted in their fields of application. This interpretation is supported both in the dialogues and in the secondary literature. For

example, in the *Phaedrus*, when Socrates states that collection and division allow him to speak and to think (“λέγειν τε καὶ φρονεῖν”; 266b), there is no qualification: Socrates does not say that collection and division allow him to speak and to think in a specific domain of inquiry, for example, or in a particular way. Moreover, a sampling of the areas in which collection and division are applied in the dialogues indicates their scope:

Love and madness (*Phaedrus* 265e)

Definitions of the angler and the sophist (*Sophist* 218e, 221c)

Definition of the statesman (*Statesman* 258b)

Vocal sound (*Philebus* 18b5-18d2)

Music (*Philebus* 17c)

Dance (*Philebus* 17d)

Number (*Statesman* 262e)

In this selection alone, collection and division extend into the domains of psychology, religion, linguistics, the performing arts, and mathematics. Also, as was shown in Section 1.2.2 (pg. 26), a wide range of subjects is considered even within one division.

Additionally, the third interpretation is to be understood as including the first and the second. Collection and division are applied in all three cases. To clarify this point using a mathematical example: the natural numbers have esoteric as well as commonplace applications; e.g., Plato had enumerated the five highest Forms in the *Sophist* (255e), yet children use the same numbers for counting physical objects. Similarly, one may start with an indefinite number of sensible objects and conceive of

them as one, or start with a number of abstract concepts and bring them into one interrelated whole. The *difficulty* of collecting and dividing varies depending on their application, of course, but the underlying principles are the same. Collection that underlies the discovery of new ideas and the formulation of new concepts is collection to the extent that it brings together many into a whole, and similarly for division. In short, wherever there is reasoning in terms of wholes and parts, collection and division are at work.

As will be discussed in Section 2.4, collection and division are sometimes employed as a method in the modern sense of the word – i.e., not just as a way of reasoning, but as a procedure that requires specialized knowledge. This is seen in the *Sophist* and the *Statesman*, for example. But even when collection and division are applied in this sense, they are based on the primitive (i.e., commonplace and elementary) concepts of collecting many into one, and dividing one into many. It is through understanding these concepts that the procedures illustrated in the *Sophist* and the *Statesman* come to light, and vice versa: the method of collection and division as a procedure sheds light on the underlying concepts.

Regarding the question as to whether particulars as well as Forms fall within the scope of collection and division, there is strong evidence that indicates that collection and division are not limited to Forms. For example, some commentators claim that in some cases, division applies to sensible particulars. Commenting on the divisions of the *Sophist*, Cristina Ionescu argues the following:

Focusing on the specific sequence of the definitions obtained in the *Sophist* and on what count as proper objects of division, we come to realize that, instead of treating the method of division as exclusively confined to taking either particulars or

intelligible forms as its objects, we are to take the objects of division to be intelligible or sensible depending on the level of understanding at which the divisions are carried out. When we map the Stranger's approach onto the *Republic's* Divided Line, we see that collections and divisions can be carried out at various levels corresponding to one or another of the four segments of the Line: imaging (*eikasía*), belief (*pístis*), thought (*dianoia*), and understanding (*noēsis*). Thus whether the objects of one division are forms or particulars depends on the level of comprehension at which the division is made (42).

Ionescu is correct; in fact, the argument can be extended as follows: the image of the divided line *is* an image in the sense that we are not to understand imaging, belief, thought, and understanding as *in reality* being placed on a line, but by imagining the parts in this way, relations between the parts become perspicuous. More specifically, the divided line makes evident (1) that the four parts of the line form a whole, or conversely, the whole is divided into four parts; (2) the names of the parts clarify what the parts stand for, and (3) each part is placed in the whole relative to the others, its position indicating its relation to the other parts. In other words, by constructing an articulate image and dividing it into parts, Plato makes clear the relation between imaging, belief, thought, and understanding. The employment of images as devices of reasoning will be explored further in Section 2.3.2, where a passage from the *Laws* states that in some cases, we cannot reason *without* images (pg. 139). It will be argued that images are not only useful, but sometimes necessary, for reasoning.

Another way of answering the question of scope is by considering a hypothetical argument against the claim that collection and division are wide in scope: *if* (so the argument goes) division applies *only* to one section of the Divided Line, for example, the understanding of Forms, then there would be a separate kind of division that applies to

the other segments, such as images.<sup>38</sup> The key question in this case is, do the two kinds of division – one for Forms, and one for images – have a common characteristic? This must be the case since they both involve a kind of reasoning in which one is divided into many; i.e., both the division of a Form and the division of an image operate by dividing a whole into parts. In this sense, there is one general kind of division that covers both Forms and images. To argue the contrary – that there are two distinct kinds of division that share a common characteristic – would be contradictory; it would be similar to the argument that there are two Forms of bed as discussed in the *Republic* (597c-d). Here, Socrates argues that it would be wrong to posit two Forms for a single nature: the second Form would be superfluous. In other words, since two separate Forms of bed would have a shared nature – they are both Forms of bed – ultimately they must be unified under a single Form that comprises both.

Counting and number serve as an analogy. Whether one is reasoning about three trees, three segments of a line, or three Forms, for example, the number is the same. In the *Republic*, Socrates states that number touches everything: it is “that common thing that every craft, every type of thought, and every science uses ...”<sup>39</sup> (“Ὅτιον τοῦτο τὸ κοινόν, ὃ πᾶσαι προσχρῶνται τέχναι τε καὶ δianoiai καὶ ἐπιστήμαι ...”; 522c). It would be wrong, though not evidently so, to posit a separate kind of counting and number for physical objects on the one hand, and for geometric figures and Forms on the other. The principles of counting and the ordering of lesser and greater apply equally in all cases. Similarly, reasoning about wholes and parts underlies thinking about Forms,

---

<sup>38</sup> Clearly, a given image can be understood in terms of its parts; this is a rudimentary way of thinking that is nearly universal. Similarly, objects of belief and thought can also be understood as having parts.

<sup>39</sup> Translated by G.M.A. Grube (Plato 1139)

mathematical objects, sensible objects, and images. In all cases, the parts of a whole can be discerned, they can be named, and their relations can be established. Precisely how these operations function will be discussed in Chapter 2.

## 1.7 Conclusion

There is good reason to revisit the role that collection and division play in the dialogues. By doing so, questions regarding ancient views on logic and reasoning can be formulated. Through these questions, a better understanding of Plato's later dialogues and their influence on modern-day thought can be approached.

More specifically, the following questions can be asked. Are systems of deductive logic such as the syllogistic independent of collection and division? Similarly, what is the relation between collection and division and non-deductive reasoning? To answer these questions, a better understanding of what collection and division are, as well as the nature of their results, is required. I will argue that collection and division define logical frameworks that underlie deductive and non-deductive reasoning. To defend this thesis, I will answer three questions.

First, precisely how can collection and division produce a logical framework? The short answer is that collection and division are based on three operations: *seeing*, *naming*, and *placing*. In terms of division, *seeing* is a form of reasoning in which the parts of a conceptual whole are discerned – i.e., the internal structure of a concept is brought to light through this operation. *Naming* articulates the parts of a whole, allowing each part to be treated as a concept in its own right. Finally, it is through *placing* that the

interrelations between parts are defined. Repeated applications of these three steps yield a logical framework that serves as a definition or starting point for further reasoning. All three operations will be discussed further in Chapter 2.

Second, what precisely is a logical framework? Chapter 3 will present the argument that collection and division do not always produce genus-species trees. In other words, collection and division often produce a logical structure of overlapping concepts that are not arranged in a strict hierarchy. Moreover, instead of using collection and division to define something or someone other than oneself, one may find that one is already defined by others – i.e., one is “inside” of a logical framework produced by collection and division. If the definition is incorrect, the task then becomes one of how to look for and recognize errors in the framework for the purpose of arguing against the definition.

Third, what is the relation between collection and division and deductive and non-deductive forms of reasoning? This question will be explored in Chapters 4 and 5. Using the syllogistic as defined in Aristotle’s *Analytics* as a representative deductive system, Chapter 4 will show that frameworks produced by collection and division serve as the basis of deductive reasoning. It will do so by showing how four moods of the first figure can be derived from a framework defined in the *Sophist* using axioms from non-extensional mereology. Chapter 5 will argue similarly: non-deductive reasoning is also based on collection and division. In this regard two dialogues in particular will be discussed, the *Meno* and the *Euthyphro*. The conclusion of this chapter will argue that Meno’s definition of virtue is the result of an incomplete application of collection and



division, while Euthyphro's definition of piety illustrates how collection and division integrate reasoning about individuals and universals.

The concluding chapter will summarize some of the key points of the previous chapters and discuss the problems involved in constructing images that accurately reflect their objects. It will also discuss some unanswered questions about collection and division and indicate avenues for future research by raising questions about how wholes and parts can be discerned. These questions will be discussed in the context of a passage from the *Parmenides*, where the movement from one to many and many to one is discussed.

To summarize, Chapter 2 will discuss how a framework is constructed through three operations; Chapter 3 will discuss what a framework is and two different perspectives by which a framework can be understood; Chapters 4 and 5 will discuss how a framework serves as the basis for deductive and non-deductive reasoning respectively, and Chapter 6 will provide a summary of key points from the previous chapters and introduce avenues for future research.

## Chapter 2

### Framework Construction

#### 2.1 Introduction

This chapter describes how collection and division operate to produce a logical framework. I will argue that collection and division are based on three basic operations: *seeing*, *naming*, and *placing*.<sup>40</sup> In short, *seeing* is the discernment of conceptual wholes and parts; *naming* articulates the parts of a whole; and *placing* orders the parts of a whole into a structure. Section 2.2 will explain that these operations typically apply to concepts and parts thereof. Section 2.2.4 describes how the three operations interact in a stepwise process: (1) the parts of a conceptual whole are discerned; (2) the parts are named, and (3) the target to be defined is placed into one of the parts. Repeated applications of these three steps yield a logical framework that serves as a definition and a starting point for further reasoning.

The remainder of this chapter will address three related questions. While Section 2.2 explains the *function* of each operation, the question remains as to *the means by which* reasoning is carried out in collection and division. This question is addressed in Sections 2.3 and 2.4, where the relations between collection and division and images and reasoning will be discussed. Section 2.5 will address a special case of collection and division by considering the question of how the three operations can be applied to a

---

<sup>40</sup> These operations were introduced in Section 1.3 and will be discussed in detail in Section 2.2 below.

continuum such as sound. Section 2.6 will conclude the chapter by emphasizing that *seeing*, *naming*, and *placing* are elementary and commonplace; i.e., they are “trivial” in the true sense of the word. Since they are elementary, they are seen in everyday forms of reasoning as well as the procedures illustrated in the *Sophist* and the *Statesman*.

## 2.2 Three operations: *seeing*, *naming*, and *placing*

This section will discuss each of the three operations that underlie collection and division. In this discussion, an “operation” is an activity of reasoning that is applied to a concept or parts thereof for the purpose of bringing the reasoner one step closer to a conclusion. In other words, given the definition of logic as a step-by-step process for reaching an endpoint (Section 1.5.3, pg. 74), an operation is the means by which a step is taken. The example below outlines a series of three steps, each of which is an operation of collection and division, from the divisions of the angler in the *Sophist*:

Step 1: the concept of *fishing* is seen to have parts (220b9-10).

Step 2: one part is named ‘striking,’ thereby distinguishing it from aquatic hunting with nets (220b12-13).

Step 3: the angler is placed under *striking* (221b7).<sup>41</sup>

---

<sup>41</sup> There is no explicit reference to the final step in this case; instead, the placement of the angler under *striking* as opposed to other kinds of fishing is implicitly made when the former is stated as part of the definition of the angler (Appendix B 2). As will be shown in Section 2.2.4 and 2.6, even though all three steps are not always evident in the illustrations of collection and division, the resulting definition presupposes all of these steps; i.e., without these steps, a definition or logical framework cannot be formulated.

In Step 1, *seeing* moves the process forward one step by discerning the parts of *fishing*. In Step 2, *naming* moves the reasoner another step forward by naming one part ‘striking,’ thereby articulating a boundary between one part of fishing and another (hunting with nets). In Step 3, *placing* moves another step forward by placing the target to be defined under one of the two parts of *fishing*, *striking*. It is through repeated applications of these operations that a definition – i.e., a logical framework – is ultimately produced. Thus, in this case, *striking* becomes part of the definition of the angler (see Appendix B 2). When enough parts are in place, construction of the framework is complete. This process will be discussed in more detail below, and it will be argued in Section 2.2.4 that the three operations typically, but not always, operate in the order specified above; i.e., *seeing*, *naming*, and *placing*.

In Section 1.5.3 (pg. 74), it was explained that the definition of logic as a stepwise process of reasoning with an endpoint derives from the *Theaetetus*, where thinking is described as a series of affirmations and denials that leads to something definite (189e6-190a4). Each of the three operations listed in the example above can be understood as an affirmation with a corresponding denial. Thus, in Step 1, it is affirmed that *fishing* is not indivisible (and denied that it is), but has a structure. In Step 2, it is affirmed that one part of the structure is articulated by the name ‘striking.’ In Step 3 it is affirmed that the angler practices striking (and simultaneously, it is denied that he uses nets). Thus, each step is an affirmation in a process of reasoning that reaches something definite – a definition that serves as a logical framework.

*Seeing*, *naming*, and *placing* are used in various guises throughout the collections and divisions of the *Sophist*, the *Statesman*, and the *Philebus*. In short, the function of

*seeing* is to discern the parts of a whole, the function of *naming* is to “seal” a part by articulating its conceptual boundaries, thus allowing it be treated as a whole of parts in its own right, and the function of *placing* is to define the interrelations between the parts and the parts and the whole.

This analysis of collection and division into three operations is not the only way of analyzing collection and division. For example, Moravcsik lists three “ingredients” of “the anatomy of the divisions and collections” of the dialogues: “(a) a series of namings, (b) a series of cuttings and (c) the interweaving of the products into definitions” (“Plato’s Method of Division” 160). However, Moravcsik’s analysis is circular. While he refers to “a series of cuttings” as an ingredient of collection and division, he also refers to the same ingredient as “the series of divisions and cuttings” (Moravcsik, “Plato’s Method of Division” 162). In general, the terms for cutting and dividing are conflated,<sup>42</sup> and this begs the question as to what precisely division is. Does it make sense to define love, for example, using the term ‘love?’ No. Then why use the term ‘division’ when analyzing collection and division? Also, the question remains as to whether this “series of divisions and cuttings” is an ingredient of collection. If not, then it is a part of (or the same as) *division*, not *collection and division*. Yet Moravcsik claims that the three ingredients are parts of “the anatomy of the divisions and collections,” not just the anatomy of division (“Plato’s Method of Division” 160). In short, it is not clear how, precisely, the three ingredients relate to collection and division either separately or as a unified process. What is needed is not an analysis of the method of collection and division that stops at the level

---

<sup>42</sup> For example: “As we turn our attention to the series of divisions and cuttings, the first question is: what is it that is being cut, and what are the results of the divisions? In general, the answer is that the Form of art is being cut, and that it is divided into parts or kinds...Again, as above, the question can be raised whether the divisions involve the cutting of a plurality...” (Moravcsik, “Plato’s Method of Division” 162-163).

of division, but a finer-grained analysis that avoids the problem of circularity.

A similar criticism can be made against S. Marc Cohen's response to Moravcsik's analysis. In his article "Plato's Method of Division," Cohen claims that "the method" requires the following "procedures": *selection, division, collection, location, and closure* (187-188). If the method of division (or collection and division – Cohen does not specify) requires "collection" and "division," what does this tell us? If by "collection" and "division" Cohen is really referring to something else, why use the names 'collection' and 'division?' Such terminology only calls into question what precisely "the method" is supposed to be – as with Moravcsik's list of three ingredients, the analysis is circular if by "the method" Cohen is using an abbreviated expression that stands for 'the method of division' or 'the method of collection and division.'

Thus, while analyses of collection and division into "ingredients" or "procedures" have been presented, in my view there is a need for an analysis along different lines. In short, the purpose of analyzing collection and division into three operations, *seeing, naming, and placing*, is twofold: (1) it explains the forms of reasoning that underlie collection and division, and (2) the analysis explains more precisely how collection and division operate as a step-wise inferential process.

In Section 1.6.3 it was argued that collection and division apply to a range of objects. However, this chapter will focus on conceptual wholes, since these are the focus of attention in the illustrations of collection and division. Thus, in general, the terms 'whole' and 'conceptual whole' refer to a concept that is under consideration. For example, in the *Phaedrus*, Socrates divides madness into the *human* and the *divine*, and

the latter is divided into four kinds:<sup>43</sup> the *prophetic*, *mystic*, *poetic*, and *erotic*. He performs the divisions while composing a speech for Phaedrus in the countryside, using a figurative scheme in which the human kind is placed on the left, and the divine kind on the right (see figure 1, pg. 22). There is no presumption that Socrates had gathered empirical data on Eros, Aphrodite, and other aspects of divine madness that he describes, the point being that he is describing his *conception* of love and madness. The *Phaedrus* illustrates how collection and division are used to divide a concept as if it were a whole of named parts. In other words, a concept is treated as a whole subject to division which, *if* it is applied correctly, yields a conceptual map that accurately represents the object (Form or community thereof), its parts, and their interrelations. Note that at 265b Socrates states that his picture of madness may not be true: “We expressed the passion of love figuratively; perhaps it had a measure of truth in it, though it may also have led us astray”<sup>44</sup> (“καὶ οὐκ οἶδ’ ὅπη τὸ ἐρωτικὸν πάθος ἀπεικάζοντες, ἴσως μὲν ἀληθοῦς τινοῦ ἐφαπτόμενοι, τάχα δ’ ἂν καὶ ἄλλοσε παραφερόμενοι”). In other words, there may not be a corresponding reality if the image is incorrect – perhaps there is no such thing as divine madness as Socrates describes it. Thus, Socrates is analyzing a concept which may or may not correspond to reality, but the central question for this chapter is, how is any concept at all “mapped out” to begin with, or in other words, how is it treated as a whole of parts?

---

<sup>43</sup> The reader is referred to Section 1.5.3 (pg. 74) for a clarification of the term ‘kind’ as opposed to ‘part.’

<sup>44</sup> Translated after A. Nehamas and P. Woodruff (Plato 542), with modifications.

### 2.2.1 Seeing

In collection and division, *seeing* is the discernment of wholes and parts. More specifically, through the recognition of similarities, seeing brings many into a whole; through the recognition of differences, it discerns the parts of a whole. With division, a unity is seen to have an internal structure; it is seen not as an opaque whole, but a whole of parts. With collection, the many are seen to have a similarity and are brought into a single whole.

The term ‘seeing’ is used to reflect the terminology employed in the illustrations of collection and division. This will be discussed further below. Moreover, seeing – whether as a kind of intellectual seeing or the perception of sense objects, or a combination of both – is ubiquitous, i.e. it underlies everyday reasoning. The slave boy in the *Meno* could easily “see” the sides of the square drawn by Socrates, for example. This is not to say that discerning the parts of a whole is a simple matter in every case: to use an example from the *Statesman* (277e-278c), a child learning the alphabet can see writing on a page or hear spoken sound, but learning how to distinguish each letter – i.e., to perceive each part of the text or sound as a discrete and recognizable unit – requires the ability to discern the parts correctly, to “see” in the right way. In both the simple and the difficult cases, a way of reasoning that performs the same function, bringing the parts of a whole to light, is at work.



### 2.2.1.1 Seeing and reasoning

Seeing and knowing are intimately connected, both in the dialogues and in ancient Greek philosophy and literature at large. For Plato as well as Aristotle, sight is privileged among the senses.<sup>45</sup> For example, the power of the eyes is described in the *Timaeus* as follows:

τὰ μὲν οὖν τῶν ὀμμάτων συμμεταίτια πρὸς  
τὸ σχεῖν τὴν δύναμιν ἦν νῦν εἴληγεν εἰρήσθω· τὸ δὲ μέ-  
γιστον αὐτῶν εἰς ὠφελίαν ἔργον, δι' ὃ θεὸς αὐθ' ἡμῖν  
47(a) δεδώρηται, μετὰ τοῦτο ῥητέον. ὅψις δὴ κατὰ τὸν ἐμὸν  
λόγον αἰτία τῆς μεγίστης ὠφελίας γέγονεν ἡμῖν, ὅτι τῶν  
νῦν λόγων περὶ τοῦ παντὸς λεγομένων οὐδεὶς ἂν ποτε ἐρρήθη  
μήτε ἄστρα μήτε ἥλιον μήτε οὐρανὸν ἰδόντων. νῦν δ' ἡμέρα τε  
καὶ νύξ ὀφθεῖσαι μῆνές τε καὶ ἐνιαυτῶν περίοδοι καὶ ἰσημερίαι (5)  
καὶ τροπαὶ μεμηχάνηται μὲν ἀριθμὸν, χρόνου δὲ ἔννοιαν  
περὶ τε τῆς τοῦ παντὸς φύσεως ζήτησιν ἔδοσαν· ἐξ ὧν  
(b) ἐπορισάμεθα φιλοσοφίας γένος, οὗ μείζον ἀγαθὸν οὐτ' ἦλθεν  
οὔτε ἤξει ποτὲ τῷ θνητῷ γένει δωρηθὲν ἐκ θεῶν. λέγω δὴ  
τοῦτο ὀμμάτων μέγιστον ἀγαθόν (46e6-47b3)

Let us conclude, then, our discussion of the accompanying auxiliary causes that gave our eyes the power which they now possess. We must next speak of that supremely beneficial function for which the god gave them to us. As my account has it, our sight has indeed proved to be a source of supreme benefit to us, in that none of our present statements about the universe could ever have been made if we have never seen any stars, sun or heaven. As it is, however, our ability to see the periods of day-and-night, of months and of years, of equinoxes and solstices, has led

<sup>45</sup> In the first book of the *Metaphysics*, Aristotle states that sight is the most preferable of the senses:

οὐ γὰρ μόνον ἵνα πράττωμεν ἀλλὰ καὶ μηθὲν  
μέλλοντες πράττειν τὸ ὄρᾶν αἰρούμεθα ἀντὶ πάντων ὡς εἰπεῖν (25)  
τῶν ἄλλων. αἴτιον δ' ὅτι μάλιστα ποιεῖ γνωρίζειν ἡμᾶς  
αὕτη τῶν αἰσθήσεων καὶ πολλὰς δηλοῖ διαφοράς. (1.1, 980a24-980a27)

For not only with a view to action, but even when we are not going to do anything, we prefer sight to almost everything else. The reason is that this, most of all the senses, makes us know and brings to light many differences between things.

(Translated by W.D. Ross; cited under Aristotle, *The complete works of Aristotle in Works Cited*)

to the invention of number, and has given us the idea of time and opened the path to inquiry into the nature of the universe. These pursuits have given us philosophy, a gift from the gods to the mortal race whose value neither has been nor ever will be surpassed.<sup>46</sup>

It is the power (δύναμις) of the eyes that reveals not only the visible universe, but leads to great discoveries of a more abstract kind, such as the invention of number. In other words, seeing is a form of inquiry that is wide in scope: it applies to both the visible and the invisible. As such, it is intimately connected with philosophy and inquiry in general. Michail Maiatsky observes that “Socrate-Platon insiste sur les différences qui distinguent la vue des autres sens,” and, commenting on 47ab in the *Timaeus*, he states “la vertu (‘bonté’) suprême des yeux (*ommatôn megiston agathon*, b3) consiste en leur fonction protreptique à l’égard de la philosophie qui, elle, est le cadeau le plus grand des dieux (b1-2). La suprématie de la vue ne se mesure donc pas par comparaison avec d’autres «sens», mais plutôt relativement à la philosophie à laquelle elle n’a affaire que protreptiquement”<sup>47</sup> (161). As a gift of the gods through which philosophy instructs, seeing has much in common with the source and purpose of collection and division (see Section 1.6.2).

### 2.2.1.2 Seeing and collection and division

---

<sup>46</sup> Translated by Donald J. Zeyl (Plato 1249).

<sup>47</sup> “Socrates-Plato insists on the differences which distinguish sight from the other senses. ... The supreme virtue (‘good’) of the eyes ... consists in their protreptic function in respect to philosophy, this being the greatest gift of the gods. The supremacy of sight is not measured relative to the other senses, but rather in relation to its instructive role in philosophy.”

There are at least two ways of seeing that are exhibited in illustrations of collection and division. One is the “seeing together” of the *Phaedrus*, which sees a likeness or resemblance of many things and brings them into one. This corresponds to collection. The other is to “see” a difference, in other words, to see a “cut” or a “fissure” in one thing, thereby articulating a whole into two or more parts. This corresponds to division. Laura Grams explains the importance of seeing as follows:

Plato often appeals to the ability of a particular practitioner to ‘see’ the appropriate places to divide into kinds and grasp the unity of a subject. Socrates praises the ability of the godlike person who is able to discern unities, while the Visitor praises the person who knows how to discriminate according to kinds... (*Phdr* 266b, *Sph* 253e1-2). (154)

In my view, this reading is correct, and it emphasizes the two-fold nature of seeing: on the one hand, seeing brings together the scattered many into a unity, on the other, it discerns differences within a whole – i.e., it recognizes the parts of a whole.

Recent commentators are not in agreement as to whether collection and division involve perceiving sensible phenomena as opposed to intellectual or imaginative seeing, nor do they always make a distinction between the two. For example, Sayre describes collection in terms of seeing in the conventional sense, i.e. the perception of sensible phenomena. According to Sayre, in the *Phaedrus* and the *Sophist*, collection is a process in which a dialectician “perceives a single Form pervading many instances”; i.e. a Form whose “presence is somehow revealed in many sensible things” (*Metaphysics and Method* 48). In other words, while the Form itself is not directly perceived, it is recognized through perception of its sensible participants. Similarly, David Ambuel states that in the *Phaedrus*, collection is “the grouping together of perceived resemblances” (22)

and collection and division both operate on “the appearance of resemblance and difference as discovered by perception, followed by the determination of what genuine resemblances or differences underlie the perception” (22). But not all commentators believe that collection involves “sensible things” that reveal a single Form or resemblance. For example, Moravcsik states that collection does not involve “empirical observations” but “the mental survey of a certain collection of abstract entities” (“Plato’s Method of Division” 179).

At *Phaedrus* 265c-266b, collection and division are defined as two “εἶδη” that perform complementary operations: a “seeing” and “bringing” together into one idea, and a cutting or dividing along the natural joints of an idea. Plato describes collection in particular – the first “εἶδη” of the pair – at *Phaedrus* 265d3-5: “Εἰς μίαν τε ιδέαν συνορῶντα ἄγειν τὰ πολλαχῆ διεσπαρμένα, ἵνα ἕκαστον ὀριζόμενος δῆλον ποιῆ περὶ οὗ ἂν ἀεὶ διδάσκειν ἐθέλῃ” (“Seeing and bringing together many scattered things and collecting them into one idea, so that by defining each thing we can make clear the subject of any instruction we wish to give”).<sup>48</sup> In this passage, “συνορῶντα” is often translated as “seeing” or “perceiving” (e.g. Goold 533; Hackforth. *Phaedrus* 132; A. Nehamas and P. Woodruff in Plato 542). The word derives from the Greek words ‘συν’ (‘with,’ ‘together’) and ‘ὀράω’ (‘seeing,’ ‘perceiving’) (Beekes 1095), and it essentially means “seeing-together,” the idea being that the “bringing” (“ἄγειν”) together into one occurs with or by way of seeing. Plato is not specific about what kind of seeing takes place during collection, but examples of the method that are found in the *Phaedrus* and other dialogues make it clear that Plato is not always describing empirical observation.

---

<sup>48</sup> Translated after A. Nehamas and P. Woodruff (Plato 507), with modifications.

For example, in the *Statesman* the natural numbers (ἀριθμός) are divided into two classes using the method (262e).<sup>49</sup> When “πολλαχῆ διεσπαρμένα” are unified into a single idea through collection, madness is revealed as a whole of parts – i.e., as an abstract structure, not a partless unity. Griswold’s conceptual map of madness as it is described at *Phaedrus* 265a-c (179; see figure 1) provides an illustration of the parts of madness according to Socrates’ description. The spatial arrangement of this map is imaginary; left and right, up and down are projections of a structure that takes shape in the intellect, not in physical space. Thus, when Plato speaks of dividing an “εἶδος” into left-hand and right-hand parts at *Phaedrus* 266a, he is referring to an intellectual capacity in which the parts of madness are seen in an imaginary or figurative space. Griswold’s diagram clearly shows that for Socrates, madness is not just an opaque whole, but it has many “parts.” These parts are “named” and “placed” – these are separate but related functions that will be discussed in detail below. For now, it is important to note that the mere bringing together into a whole results not only in a whole, but a whole in which parts are discerned.

Seeing and thinking are intertwined. In his discussion on collection and division in the *Phaedrus*, Griswold refers both to a capacity of *noesis* (perception of the mind) and of collection and division as the capacity to see; according to Griswold, both *noesis* and collection and division “depend on the capacity to *see* what it is we wish to say or analyse, to see how to analyse it, and to see when the analysis is finished and completed” (176). He also states that “there is a corresponding emphasis in the passages on division and collection on verbs related to ‘seeing’” (176). In my view, Griswold is correct: similarities and differences must be recognized in order to analyze and combine. Thus,

---

<sup>49</sup> Intellectual seeing occurs in many other places in the dialogues; e.g. numbers are understood as having a “σχήμα” (“shape”) at *Theaetetus* 147e, and an imagined geometric figure that represents an argument is described at *Gorgias* 465b.

when Socrates sees that the “scattered many” can be brought into one idea (*Phaedrus* 265d), he recognizes similarities among the many forms of madness, and in turn madness is analyzed according to differences between the divine and human aspects. This brings Socrates a step closer to formulating a definition of love. More generally, collection and division allow Socrates to think and to speak (*Phaedrus* 266b). The connection between seeing and thinking is also supported by the passage from the *Timaeus* quoted above, where the power of sight is the basis of inquiry into both the visible and the invisible.

Seeing and collection and division appear together in dialogues other than the *Phaedrus*. For example, in the *Statesman*, when instructing the younger Socrates in how to divide correctly, the Eleatic Stranger states the following:

... ὅταν (b) μὲν τὴν τῶν πολλῶν τις πρότερον αἰσθηται κοινωνίαν, μὴ προαφίστασθαι πρὶν ἂν ἐν αὐτῇ τὰς διαφορὰς ἴδῃ πάσας ὅποσαι περ ἐν εἶδεσι κεῖνται, τὰς δὲ αὖ παντοδαπὰς ἀνομοιότητας, ὅταν ἐν πλήθεσιν ὀφθῶσιν, μὴ δυνατὸν εἶναι δυσωπούμενον παύεσθαι πρὶν ἂν σύμπαντα τὰ οἰκεῖα ἐντὸς μιᾶς (5) ὁμοιότητος ἔρξας γένους τινὸς οὐσίᾳ περιβάληται. (285a7-285b6)

... when a person at first perceives only the unity or common quality of many things, he must not give up until he sees all the differences in them, so far as they exist in classes; and conversely, when all sorts of dissimilarities are seen in a large number of objects he must find it impossible to be discouraged or to stop until he has gathered into one circle of similarity all the things which are related to each other and has included them in some sort of class on the basis of their essential nature.<sup>50</sup>

Here, one who applies the method must “see” (‘ἴδῃ,’ ‘ὀφθῶσιν’) both commonalities and differences.<sup>51</sup> The reference to “gathering into a circle” connotes a perimeter that

<sup>50</sup> Translated by H.N. Fowler (Henderson, *Philebus* 105), with modifications.

encloses the many into a unity. Moreover, not only are many gathered into one, differences are seen as well. To return to the *Phaedrus*, while Socrates brings together the “scattered many” into one idea, madness, madness is also understood as having parts (the human and the divine).

### 2.2.1.3 Limit to the analysis of seeing

As argued above, seeing is the discernment of wholes and parts. However, precisely what happens when discernment occurs is a mystery. This raises the following question: we can see similarities and differences, thereby discerning wholes and parts, but can we do so consistently? Apparently not: even within the same dialogue, one’s image of the statesman or sophist changes significantly (see Appendix B).

When a whole is suddenly seen to have parts, a crucial step on the way to a conclusion – i.e., on the way to constructing a framework – has taken place, but precisely how this step is made is a mystery. For example, in the *Statesman*, the Stranger searches for a “cut” (τομή) in the “self-directing” kind of expertise:

ΞΕ. Οὐκοῦν ἐπειδὴ τοῦτο μετρίως ἀφέστηκεν ἀπ’ ἐκείνων, ἀλλοτριότητι διορισθὲν πρὸς οἰκειότητα, τοῦτο αὐτὸ πάλιν αὖ διαιρεῖν ἀναγκαῖον, εἴ τινα τομὴν ἔτι ἔχομεν ὑπέικουσαν ἐν (5) τούτῳ;

ΝΕ. ΣΩ. Πάνυ γε.

ΞΕ. Καὶ μὴν φαινόμεθα ἔχειν· ἀλλ’ ἐπακολουθῶν σύν-  
τεμνε. (261a3-9)

---

<sup>51</sup> It is important to note that the discernment of commonalities and differences does not presuppose the perception of sense objects, and it will be argued below that the operation of seeing is not restricted to sensible phenomena (Section 2.2.1.4).

Stranger: Well then, since [self-directing expertise] is at a certain distance from those others, distinguished by difference in relation to kinship, we must in turn divide it too, if we still find some cut yielding to us in it?

Young Socrates: Certainly.

Stranger: And what's more, it appears we have one: follow on and make the cut with me.<sup>52</sup>

Here, a search initiated at line 261a5 yields the appearance of a cut at line 268a8, but there is no indication of precisely how the search was performed or how the cut was found. It is similar in the following example from the *Sophist*. In this case, the Stranger asks Theaetetus to determine if discrimination (διάκρισις) can be divided into two kinds:

ΞΕ. Σκόπει δὴ ταύτης αὖ δύο ἄν πη δυνώμεθα κατιδεῖν (10) εἶδη.

ΘΕΑΙ. Ταχεῖαν ὡς ἐμοὶ σκέψιν ἐπιτάττεις.

(d) ΞΕ. Καὶ μὴν ἔν γε ταῖς εἰρημέναις διακρίσει τὸ μὲν χεῖρον ἀπὸ βελτίονος ἀποχωρίζειν ἦν, τὸ δ' ὅμοιον ἀφ' ὁμοίου. (226c10-226d3)

Stranger: Think about whether we can see two kinds in it.

Theaetetus: You're asking me to do some quick thinking.

Stranger: In fact in what we've called discriminations one kind separates what's worse from what's better and the other separates like from like.<sup>53</sup>

The turning point occurs between 226c10 and 226d1, i.e. at some point when Theaetetus says “Ταχεῖαν ὡς ἐμοὶ σκέψιν ἐπιτάττεις,” the two kinds are discovered. The question is: what kind of thinking or inquiry (σκοπέω; σκέψις) took place – i.e., how precisely were the two kinds discovered?

A similar process takes place in the *Sophist* at 229d, where the parts of education are seen (Appendix A 11), and at 268a1, where a seam (διπλόη)<sup>54</sup> is discovered in belief-

<sup>52</sup> Translated after C.J. Rowe (Plato 300), with modifications.

<sup>53</sup> Translated after Nicholas P. White (Plato 247), with modifications.



mimicry (see Section 2.2.4, pg. 129). In the latter case, there is a movement from a seamless unity to the revelation that it has parts – i.e., there is a point at which a hidden structure is uncovered by way of inspection. But how this seam is brought to light remains a mystery.

These passages raise the following question: in general, what happens when reasoning moves from one to many? There is an important transition that takes place between seeing a whole, and seeing that the whole has parts – i.e., that it has a hidden structure. It seems that there is a moment in which a cut or seam appears in the whole. This is a crucial moment, as it is the time at which the parts of a whole are discerned. Conversely, in the case of collection, there is a moment in which the scattered many are seen as one (see Section 2.2.1.2, pg. 105). It will be argued in Section 6.3.3 that passages in the *Parmenides* and the *Symposium* may shed light on the precise means by which the movement from one to many and from many to one takes place. An alternative solution to this problem will be presented in Section 2.2.4 below (pg. 129), where it will be argued that seeing does not operate in isolation, but occurs as one step in a unified process. The role that seeing plays in reasoning is clarified when understood in the context of the remaining operations.

#### 2.2.1.4 Conclusion

In my view, the illustrations of collection and division in the dialogues make it clear that seeing is not restricted to empirical phenomena. Like naming and placing,

---

<sup>54</sup> It is noteworthy that even the seam – i.e., the boundary between parts of a whole – is treated as an individual with attributes. It is perceptible through an intellectual sight of a sort. This raises the question as to whether a seam or cut in itself can be the object of inquiry.

seeing applies to concepts which may or may not apply to sensible objects. For example, when the hidden structure of sound was discovered by Theuth (*Philebus* 18b5-18d2; see Appendix A 49), the discernment of perceptible phenomena is involved: otherwise, Theuth would not know where to begin. However, this is not to say that the recognition of the structure of sound is entirely a matter of perception – clearly, Theuth needed to reason about what he perceived in order to divide sound into parts that had hitherto remained undiscovered. In some cases at least, because of the nature of the object being studied, there must be an interplay between perception and reasoning. On the other hand, there are cases in which collection and division are applied to concepts that do not derive from sense perception; e.g., the Odd and the Even (*Statesman* 262e). But regardless of whether sense perception is involved, the essential point is that seeing in all of its modes of application is the same operation: discerning a conceptual whole and its parts via the recognition of similarities and differences, and ultimately this is a process of reasoning, i.e. of formulating a definition and discovering hidden structures.<sup>55</sup>

---

<sup>55</sup> If this is the case, why is the term ‘seeing’ used at all? Clearly, similarities and differences in *sound* were discerned by Theuth. In answer to this question, we may note that while it makes sense to say that there is a mental analog to seeing with the eyes of the body, namely seeing with the eyes of the soul (Plato uses this expression at 254a in the *Sophist*, for example), in Plato the other senses do not have mental analogs. For example, by a stretch of the imagination, one could posit a mental analog to the sense of smell: there is a “nose of the soul” that reasons through imagined odors instead of mental images. I am not aware of any passage in Plato where such an image is used, and the same applies for ears of the soul, tongue of the soul, etc. To use another example, while we can imagine that Justice has a “shape” (cf. the *Sophist* 267c), why would we imagine Justice having a smell, taste, or sound? Such an image is indicated by a statement made by Heraclitus: Fragment 98 (DK) states “αἱ ψυχὰι ὀσμῶνται καθ’ Ἄϊδην” (“souls smell things in Hades”; Kahn, 78-9). However, I believe that for Plato at least, it is *seeing* that is intimately related to thinking, and for this reason the terminology of collection and division often employs words related to seeing. For the reasons stated above, in my view ‘seeing’ operates via the intellect as well as through sense perception.

## 2.2.2 Naming

The function of naming in the context of collection and division is to articulate the parts of a conceptual whole – i.e., when employed successfully, naming brings to light the “natural joints” (ἄρθρα; *Phaedrus* 265e) of an internal structure which has been discerned through seeing. To use an example from the *Phaedrus*, one may at first discern that madness has two aspects, but only tenuously – i.e., while it may be seen that there are different kinds of madness, the means by which they may be precisely distinguished from each other may not be evident at first sight. But when these aspects are named ‘human’ (ἄνθρωπινος; 265a10) and ‘divine’ (θεῖος; 266a7), the aspects of madness become articulated, they can be communicated to others, and the means by which they can be distinguished becomes established. As explained below, naming is not limited to a purely linguistic function. In other words, in addition to allowing the reasoner to communicate the similarities and differences that have been discerned through seeing, naming also articulates the joints and segments of the structure being defined. The purpose of this section is to clarify and explain how naming operates within the context of collection and division.

### 2.2.2.1 Names have a wide scope in the dialogues

Plato develops a theory of names and naming in the *Cratylus*. For Plato, the word ‘ὄνομα’ (name) has a much wider scope than its English equivalent, ‘name.’ David Sedley remarks that names are understood in the *Cratylus* as “a loose linguistic category”

that includes common nouns and adjectives in addition to proper names (4). Similarly, in his commentary on the *Cratylus*, Francesco Ademollo observes that the characters of the *Cratylus* take a “generous view” of names; for them, names include “common nouns, adjectives and verbs in infinitive (414ab, 426c) or participle (421c) mood” (1). Ademollo points out that this understanding of names is not restricted to the *Cratylus*: “it is standard, and doubtless right, to take it that in our dialogue (and elsewhere as well) the term ὄνομα generically applies to any word whose function is not primarily syntactic (hence not to conjunctions and prepositions)” (1).

Other commentators share similar views on the scope of ‘ὄνομα.’ Gold points out that ‘ὄνομα’ “is often used much like the English word ‘word’ since nouns, verbs, and adjectives are all considered ὀνόματα (names)” in the *Cratylus*. This broad view of names is also seen outside of the Platonic corpus; Aristotle’s *De Interpretatione*, for example, states that verbs (‘ρήματα’) are also names (16b20-21; Gold 223). Examples of names listed in the etymological section of the *Cratylus* include proper names such as ‘Hector’ and ‘Apollo,’ general terms such as ‘man,’ ‘soul,’ and ‘justice,’ adjectives such as ‘advantageous’ and ‘profitable,’ and verbs such as ‘to flourish’ (Gold 223). Barnes makes a similar observation when he states that for Plato and Aristotle alike, ὀνόματα comprise proper names (e.g., ‘Theaetetus’), common nouns (e.g., ‘man’) and adjectives (Barnes, “Grammar on Aristotle’s Terms” 195-196).<sup>56</sup> In conclusion, it is clear that names have a

---

<sup>56</sup> Barnes also observes that at 261e-263a in the *Sophist*, Plato states that a sentence such as ‘Theaetetus sits’ is an “interweaving” (συνπλέκειν; 262d4) of a name (ὄνομα) and a verb (ῥήμα). However, Barnes correctly points out that Plato is describing a particular kind of sentence; i.e., he is describing “first” or “primary” sentences (“πρῶτός τε καὶ σμικρότατος”; *Sophist* 262c6-7) (180). A sentence of this sort can be distinguished from a definition produced by collection and division such as ‘Love is a kind of madness’ or ‘the Sophist is a hunter.’ Unlike the primary sentences described in the *Sophist*, the definitions articulated by collection and division involve not the interweaving of a single name with a verb, but the joining together of names by the copula (e.g., the name ‘love’ is conjoined with the name ‘madness’ in the first example above).

wide scope in the Platonic dialogues. In the following discussion, names are to be understood in the broad sense of the term: not only nouns and personal names, but verbs and adjectives count as names.

### 2.2.2.2 Naming as an operation of collection and division

Despite the fact that names have such a wide scope, the importance of naming in collection and division is not always recognized. Moravcsik remarks that the importance of names in division is often overlooked by commentators: “One of the most striking aspects of the divisions is the frequency with which the question of naming arises. It is peculiar that this feature of the divisions has not received much attention by modern commentators.” (“Plato’s Method of Division” 160).

However, the dialogues themselves are not entirely positive: because names play an important role in collection and division, they are often criticized for their limitations. For example, in the *Sophist*, because a good supply of names is lacking, the Eleatic Stranger must coin new names for two kinds of imitators:

Πόθεν οὖν ὄνομα ἑκατέρῳ τις αὐτῶν λήψεται  
 πρέπον; ἢ δῆλον δὴ χαλεπὸν ὄν, διότι τῆς τῶν γενῶν κατ’ (5)  
 εἶδη διαιρέσεως παλαιά τις, ὡς ἔοικεν, ἀργία τοῖς ἔμπροσθεν  
 καὶ ἀσύννους παρῆν, ὥστε μὴδ’ ἐπιχειρεῖν μηδένα διαιρεῖσθαι·  
 καθὸ δὴ τῶν ὀνομάτων ἀνάγκη μὴ σφόδρα εὐπορεῖν. ὅμως  
 δέ, κἂν εἰ τολμηρότερον εἰρησθαι, διαγνώσεως ἕνεκα τὴν  
 (ε) μὲν μετὰ δόξης μίμησιν δοξομιμητικὴν προσείπωμεν, τὴν δὲ  
 μετ’ ἐπιστήμης ἱστορικὴν τινα μίμησιν. (267d4-e2)

Where would you get a suitable name for each of them [i.e., each kind of imitator]? Isn’t it obviously hard to, just because the people who came before us were thoughtless and indolent about dividing kinds into types, and so they never even tried to divide them. That’s why we necessarily lack a good supply

of names. Still, even though it sounds daring let's distinguish them by calling imitation accompanied by belief "belief-mimicry" and imitation accompanied by knowledge "informed-mimicry."<sup>57</sup>

Even in this case, however, the fact that the Stranger is impelled to coin new names only emphasizes the fact that names are sometimes indispensable. On the other hand, like images, names are not always trustworthy; in the *Cratylus*, Socrates states that some names "swerve us away from what we wish to name" ("πρῶτον μὲν γὰρ τὸ τοιόνδε δεῖ ἐννοῆσαι περὶ ὀνομάτων, ὅτι πολλάκις ἐπεμβάλλομεν γράμματα, τὰ δ' ἐξαιροῦμεν, παρ' ὃ βουλόμεθα ὀνομάζοντες, καὶ τὰς ὀξύτητας μεταβάλλομεν"; 399a). Moreover, during some divisions, naming each part of a whole is considered unnecessarily complicated (e.g. at *Statesman* 265c). However, while names can divert us from the task at hand, it would be wrong to overlook their importance. Indeed, as stated in Section 1.5.1, discourse (λόγος) itself is not always trustworthy: in the wrong hands it can be employed to bewitch children, inflame crowds, or sow confusion (pg. 66). Nonetheless, discourse is essential to reasoning. I will argue the same for names below.

While the importance of names in collection and division is often ignored in the secondary literature, some recent commentators have discussed the significance of names for the method of division. In his commentary on the *Cratylus*, Ademollo states the following:

Names ... play an important role in division – not just for the trivial fact that the performance of a division is a linguistic matter, but also, more specifically, because one needs names to *separate* or distinguish each kind from the others. So it is usual to see those engaged in a division asking what the name of each kind they identify is, and sometimes applying an already established name, sometimes coining a new one, sometimes also deciding to leave the kind unnamed ... (113)

---

<sup>57</sup> Translated after Nicholas P. White (Plato 292), with modifications.

In short, names allow us to articulate the differences between concepts – for example, as explained in Section 1.3.2 (pg. 44), the name “self-directors” (“τῶν αὐτεπιτακτῶν”) distinguishes the statesman from those who appear to be like him, such as seers, heralds, and the like. Moreover, Ademollo states that perhaps “the highest and noblest use” of names is their employment in division and definition, and that this may be enough to justify the claim that “division and definition are the function of names” (113). According to Ademollo, when a name is coined during a series of divisions, the new name is most often a portmanteau or compound name that immediately articulates the nature of the kind being named; as examples he lists ‘ἀγελαιοτροφία’ (‘herd-rearing’; *Statesman* 261e) and comparable English words such as ‘steamboat,’ ‘whirlpool,’ ‘trainspotter,’ and ‘paradichlorobenzene’ (113). To his list may be added names such as ‘self-director’ (αὐτεπιτάκτης), which was coined by Plato to separate the statesman from others who are also directors (260d11-261a9; see Appendix A 21 and Section 1.3.2, pg. 44) as well as ‘appearance-making’ (“φανταστικὴν”), which distinguishes the sophist as a deceptive sort of image-maker (264c4-5; see Appendix A 14 and Section 1.3.3, pg. 45). In my view, Ademollo is correct: names play a crucial role because they articulate the distinctions that have been discerned. Without this function, a concept cannot be consistently distinguished from another and the target to be defined is confused with others. This is not to say that names play a purely linguistic role. On the one hand, one function of naming is to make the similarities and differences that have been discerned through seeing communicable. On the other hand, this is not the full extent of the function of naming. When collection and division accurately follow the “natural joints” (“κατ’ ἄρθρα ἧ πέφυκεν”; *Phaedrus* 265e) of the concept being investigated, it is through

naming that these joints – i.e., the nodes and boundaries of a concept’s internal structure – are articulated.

Similarly, Notomi states that “In the process of defining the sophist, names play a central role” (75); more specifically, he observes that “to grasp a kind in the process of division is to give it a proper name” (75). Thus, in general, wholes are divided through the discernment of named parts. Moreover, by naming a part, it too can be treated as a whole – i.e., a named part that is divisible can be treated as a whole that can be articulated into its own parts. Thus, naming allows a particular “section” of a concept to be distinguished from other parts of the same concept and treated as a concept in its own right. As an illustration, consider the definition of the angler from the *Sophist* (Appendix B 2). Here, the parts of a definition and their interrelations are articulated by means of names. For example, the first part of the definition tells us that not only is the angler an artisan, he is the kind of artisan that does not *produce* but *acquires* – i.e., it is through the name ‘acquisition’ that the part of artistry that applies to the angler is distinguished from other arts, such as the productive arts. Moreover, *acquisition* is also divided into parts, *forcible* and *coercive* (219d). By giving a part of production its own name, it too can be treated as a whole that can be divided in turn.

Names tell us what the angler is and what he is not – how else could the angler be defined? The alternative is an image, but even in this case, the specific parts of the image can be articulated and investigated through the use of names. For example, a painting of the angler can be considered as a portrait of ‘hunting,’ a portrait of ‘animal-hunting,’ or a portrait of ‘fishing’ – each of these names would serve as a way of distinguishing between various aspects of the painting – i.e., the “parts” of the image can be articulated



and communicated through the use of names. Thus, a dialogue on the painting would move in different directions depending on whether it is considered as a painting of ‘acquisition’ as opposed to a painting of ‘fishing,’ for example. In short, names pick out and articulate parts or aspects of the same image or concept, thereby giving shape and direction to reasoning about the image or concept.

Not only names of kinds, but also names of individuals play an important role in collection and division. The latter as well as the former serve to articulate the parts of a whole, and to indicate the concepts that it includes and excludes. In some cases, both names of individuals and names of kinds are used in the same division. For example, in the *Phaedrus*, names of the gods are associated with the four kinds of divine madness: *prophetic* madness is associated with Apollo, *mystic* with Dionysus, *poetic* with the Muses, and *erotic* with Aphrodite (265b). By naming individuals, new features of the concept being defined come to light. For example, the name ‘Aphrodite’ indicates that one part of divine madness may be associated not only with Eros but also with the feminine and the beautiful. Thus, the name of a paradigmatic individual such as Aphrodite brings with it other names: ‘passion,’ ‘beauty,’ ‘female,’ ‘divinity,’ etc., all of which may be important parts of the “right-hand” part of madness. The relevance of collection and division to reasoning about individuals as well as universals will be discussed further in Section 5.4.2 (pg. 258), where it will be argued that collection and division are an integration of the two forms of reasoning.

### 2.2.2.3 Conclusion

Understood in terms of spatial metaphors, names articulate the conceptual space that is divided. A name allows a particular “section” of an idea or concept to be treated as a concept or idea in its own right. To return to the example of collection and division in the *Phaedrus*, *madness* is divided into two parts, each of which is given a name, ‘human’ and ‘divine.’ The latter in turn is treated as a whole divided into four named parts, the ‘prophetic,’ ‘mystic,’ ‘poetic,’ and ‘erotic’ kinds. It is because one part of *madness* is given the name ‘divine’ that it can be articulated into parts of its own. In other words, if Socrates had stated simply that there are different kinds of madness, and left it at that, then the dialogue would reach a standstill: all Phaedrus would know is that there are “parts” of madness, but without the use of names he would not know what those parts are, how they differ from each other, and how they are related to the whole.

In short, names serve as devices for articulating the parts of a framework. By naming we move from a perception or discernment of many loosely-defined parts of a whole to the articulation of the perimeters around each relevant part – i.e., for each part under which the target falls we enclose or “pen in” many things into one by the use of a name, thus excluding what falls outside of the perimeter. An example of this was discussed in Section 2.2.2.2 (pg. 116), where the name ‘self-director’ is used to distinguish the statesman from others who appear to be similar. In other words, things are both ruled out and ruled in when a name is chosen correctly.

### 2.2.3 Placing

Placing establishes the relations between the parts of a whole. In this section I will argue that in the illustrations of collection and division, at least two kinds of placement are evident: the placement of a part within a whole on the one hand, and the placement of the target to be defined within a part on the other. An illustration of the former kind of placement occurs in the *Phaedrus*: *human madness* is placed on the “left-hand” (σκαίον) of *madness*, while *divine madness* is placed on the “right-hand” (δεξιᾶ) side. This shows that everything that falls under the divine kind – i.e., everything placed under the right-hand part of madness – is distinguished from the human. An example of placement in the second sense occurs in the *Sophist*, where imitation is divided into two parts, ‘likeness-making’ and ‘appearance-making,’ and the sophist is placed in the latter kind as opposed to the former. By placing the sophist in the latter kind of imitation, *appearance-making* becomes part of his definition (Appendix B 9) – i.e., part of who he is. In both cases, the purpose of placement is to arrange the parts of a whole in such a way that they become a structure. In other words, collection and division do not yield an unordered list of named parts; rather, because the parts are ordered in such a way that they are related to themselves and to the whole, the final result of collection and division is a logical structure – i.e., a definition that serves as a logical framework of interrelated parts.

The Greek word ‘τίθημι’ is often used in the illustrations of collection and division to express placement. One of the primary meanings of ‘τίθημι’ is “to put, place” and its connotations include military and legal senses such as “rest arms” (i.e., halt, but with arms readily accessible) and “to lay down as a law” (Liddell and Scott 1790). But it

also connotes a form of reasoning in which a specific claim is posited. In collection and division, the term is often used to tentatively “place” the target to be defined under one of two or more parts yielded by division, and it is often translated as ‘assume’ (e.g., Henderson, *Sophist* 283) or ‘suppose’ (e.g., Henderson, *Sophist* 363). For example, the first series of the divisions used to define the sophist begin with a question of placement within a kind, and the words ‘τίθημι’ and ‘θετέος’ are used to express this question. Looking back on the definition of the angler as a guide, Socrates states the following: “Καὶ μὴν ἐκεῖνό γ’ ἦν τὸ ζήτημα πρῶτον, πότερον ιδιώτην ἢ τινα τέχνην ἔχοντα θετέον εἶναι τὸν ἀσπαλιευτήν.” (“Well, then, the first question we asked was whether we must assume that the angler was just a man or was a man with an art.”<sup>58</sup>; 221c). The key word is ‘θετέον,’ which is translated as “assume” by Fowler (Henderson, *Sophist* 283) and “suppose” by White (Plato 241). This question is then followed by a question about the sophist: “Καὶ νῦν δὴ τοῦτον ιδιώτην θήσομεν, ᾧ Θεαίτητε, ἢ παντάπασιν ὡς ἀληθῶς σοφιστήν;” (“Shall we assume that he is just a man, or by all means really a man of wisdom?”<sup>59</sup>; 221d). Here, ‘θήσομεν’ is a form of ‘τίθημι,’ and this word serves to reinforce the idea of placement in the divisions of both the angler and the sophist. In short, placement involves an ordering of parts and wholes that is based on reasoning by assumption – i.e., placement produces an ordering which, although tentative and subject to revision, delineates a structure that can serve as a starting point for further reasoning.

It is important to note that spatial terminology (e.g., ‘σκαίον’ (‘left’) and ‘δεξιᾶ’ (‘right’) at 266a in the *Phaedrus*) is used to clarify parts of an abstract structure, and that Plato’s theories concerning *physical* space do not play a role in this context. As a parallel,

---

<sup>58</sup> Translated by H.N. Fowler (Henderson, *Sophist* 283)

<sup>59</sup> Translated by H.N. Fowler (Henderson, *Sophist* 283)

consider the square drawn in the sand in the *Meno*. Here, clearly, the drawn diagram uses spatial relations to illustrate the parts of the square, but Plato's theories about physical space (as discussed in the *Timaeus*, for example) are irrelevant to understanding the reasoning process: what matters is that the square can be "seen" and manipulated through an everyday understanding of spatial relations and familiarity with elementary geometry. Similarly, in the *Phaedrus*, it is our everyday understanding of "left" and "right" that allows us to imagine two parts of madness, human and divine, as occupying opposing positions in an imaginary space. In this case as well, the terms "left" and "right" serve as cues to the imagination that highlight the relations between *human*, *divine*, and *madness* apart from any theoretical presuppositions about the nature of physical space. Thus, for the purposes of this discussion, spatial terms refer to everyday, pre-theoretical understanding of spatial relations.

As will be explained below, a series of placements establishes order and structure. The syntactical placement of words in a sentence serves as an analogy. For example, the sentences 'One is a factor of two' and 'Two is a factor of one' both employ the same names, but they articulate different relations through the syntactical ordering of the names 'one,' 'two,' and 'factor.' Similarly, 'love is a kind of madness' comprises the same names as 'madness is a kind of love' but the placement of the names – i.e. their syntactical ordering – determines the relations between the names and the structure of each sentence as a whole. In addition, a mere list of unordered names like 'one, two, factor' or 'love, madness' does not articulate a structure at all. The point is not that placement in collection and division is syntactical placement, only that the former is analogous to the order of words in a sentence. Without ordering in a sentence, the terms

of the sentence do not fit together as a syntactical whole. Similarly, without some kind of ordering or placement of the parts relative to each other and to the whole, a structure is lacking, and without structure, there can be only an unordered list of names, not a definition (see also Section 5.2). In short, the function of placement is to articulate a logical framework through the arrangement and ordering of named parts.

### 2.2.3.1 Placement of parts relative to a whole

Entire branches of a classification may be “placed” in a certain part of a framework. This occurs in the *Phaedrus*, where divine madness is placed on the “right” side of madness, as opposed to its counterpart, human madness, which is placed on the “left” side (266a). The opposition between left and right serves to clearly mark off the two kinds and to indicate the form and shape of the overall composition. Just as Griswold’s diagram of madness (figure 1, pg. 22) maps out a structure in which the parts of madness are placed relative to one another, the use of spatial terms by Socrates in the *Phaedrus* presents a picture that clarifies the relations between the parts and the whole. More specifically, when the right side of madness is further sub-divided into the four sub-kinds of divine madness, each of the four parts is seen as being on the side opposite to the human part of madness due to the placement of their parent kind. Since each part of the structure is placed in its own locality but relative to the other parts, the structure as a whole comes to light. In short, the logical structure of a whole and its parts is clarified through the use of an imaginary space.

A similar use of the operation of placement occurs in the *Sophist*. As in the *Phaedrus*, the concepts of the *human* and *divine* are used once again, but this time it is *production* (ποιητικός), not madness, that is divided. But after the initial division of production into human and divine, a second division is made along its “length” (μήκος):

ΞΕ. ... καὶ κατὰ τοῦτον δὴ τὸν λόγον δύο ποιητικῆς γένη, τὸ μὲν (5)  
ἀνθρώπινον εἶναι, τὸ δὲ θεῖον.

ΘΕΑΙ. Ὅρθῶς.

ΞΕ. Τέμνε δὴ δυοῖν οὔσαιν δίχα ἑκατέραν αὐτίς.

ΘΕΑΙ. Πῶς;

266. (a) ΞΕ. Οἷον τότε μὲν κατὰ πλάτος τέμνων τὴν ποιητικὴν  
πᾶσαν, νῦν δὲ αὖ κατὰ μήκος.

ΘΕΑΙ. Τετμήσθω.

ΞΕ. Τέτταρα μὴν αὐτῆς οὔτω τὰ πάντα μέρη γίγνεται,  
δύο μὲν τὰ πρὸς ἡμῶν, ἀνθρώπεια, δύο δ' αὖ τὰ πρὸς θεῶν, (5)  
θεῖα.

ΘΕΑΙ. Ναί.

ΞΕ. Τὰ δὲ γ' ὡς ἑτέρως αὖ διηρημένα, μέρος μὲν ἐν  
ἄφ' ἑκατέρας τῆς μερίδος αὐτοποιητικόν, τὸ δ' ὑπολοίπῳ  
σχεδὸν μάλιστ' ἂν λεγοίσθην εἰδωλοποικῶ· καὶ κατὰ ταῦτα (10)  
δὴ πάλιν ἢ ποιητικὴ διχῆ διαιρεῖται. (265e5-266a10)

Stranger: ...According to this account there are two kinds of production,  
human and divine.

Theaetetus: Right.

Stranger: Since there are two of them, cut each of them in two again.

Theaetetus: How?

Stranger: It's as if you'd already cut production all the way along its  
width, and now you'll cut it along its length.

Theaetetus: All right.

Stranger: That way there are four parts of it all together, two human ones  
related to us and two divine ones related to the gods.

Theaetetus: Yes.

Stranger: Then if we take the division we made the first way, one part  
of each of those parts is the production of originals. Just about the best  
thing to call the two parts that are left might be “copy-making.” That way,  
production is divided in two again.<sup>60</sup>

<sup>60</sup> Translated by Nicholas P. White (Plato 290), with slight modifications

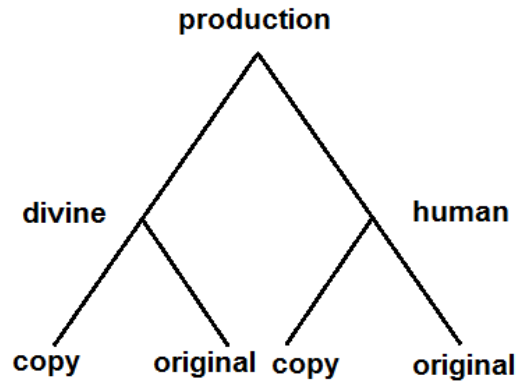


Fig. 2. Division of production in the *Sophist* (265e-266a)

Here, placement is being used to clarify the relations between the parts of production. A symmetric logical structure comes to light: just as the divine side of production has two parts, *copy-making* and the *production of originals*, so its counterpart, the human form of production, has two parts with the same names. In other words, the human and divine parts of production are mirror images of each other. The diagram shown in figure 2 illustrates the relations between the parts of production, but Plato's description serves the same purpose as a diagram: it uses two dimensions in a figurative space for the purpose of defining the relations between parts of a whole.

In addition, because the sophist is placed on the human side, by default all of the remaining placements of the sophist fall under the right side of the diagram – i.e., the sophist in all of his productive activities is occupied with human production, not divine production.

The diagram raises the question as to the precise relations between the parts of the structure, however. Are the relations hierarchical, as implied by the diagram; e.g., is *human* a subordinate kind of *production*? In other words, the diagram indicates a



hierarchy of kinds and sub-kinds, but there is also the possibility that both *human* and *production* are simply overlapping kinds in a non-hierarchical structure. Section 3.2 (pg. 158) will present the argument that while collection and division define a strict hierarchy of kinds in some cases, they define structures of overlapping parts in others. For now, the point is that without some kind of ordering or placement of the parts relative to each other and to the whole, a structure is lacking, and without structure, there can be only an unordered list of parts, not a definition. In other words, a logical framework is articulated through the arrangement and ordering of named parts.

### 2.2.3.2 Placing the target to be defined into a part

Placing also performs a separate but related function: the target to be defined is placed within a part. The pattern is as follows: a whole is divided into two parts, each part is named, and then one of the parts is determined to be applicable to the target, the other not. In other words, the target is placed under the former part, the name of the part becoming part of the definition. For example, in the *Sophist*, imitation is divided into two parts, ‘likeness-making’ and ‘appearance-making,’ and the sophist is placed under the latter kind as opposed to the former (264d). By placing the sophist in the latter kind of imitation, *appearance-making* becomes part of his definition (see Section 1.3.3, Appendix B 9). Placement for this purpose is also evident in the *Statesman*. For example, at 260e6 the statesman is placed (τίθημι) under the ‘self-directing’ sort of expertise to distinguish him from other kinds of directors (260d11-261a9; Appendix A 21).

### 2.2.3.3 Conclusion

When parts of a concept are placed within the whole, relations between the parts are defined. The placement of parts is used frequently during collection and division. Because parts of a framework are placed relative to one another, the entire structure can be seen as an ordered whole. In addition, placing a target to be defined “in” a part of a larger logical whole serves to define the target by distinguishing it from that which is similar.

In conclusion, the placing of the parts of a concept serves at least two purposes. First, it gives structure to the conceptual whole. Each part of a concept has a place in the whole, the result being that the whole is defined as a set of delineated parts that form a specific arrangement. Placement allows one to visualize the entire structure as a set of ordered, interrelated parts. Second, the target to be defined can be placed in a part, thereby adding a component to the final definition. Thus, when love is placed “on the right” under the divine part of madness in the *Phaedrus*, divine madness becomes a part of the definition of love. More specifically, through this placement the definition *love is a kind of divine madness* is established. This distinguishes love from an alternative placement; e.g., if love were placed “on the left” under human madness, its definition would change to “love is a kind of human madness.”

### 2.2.4 Seeing, naming, and placing as steps of reasoning

Seeing, naming, and placing do not operate in isolation, and although a rule-governed procedure for their employment is not specified in the dialogues, the following pattern can be seen in the illustrations of collection and division:

1. The parts of a whole are seen.
2. The parts are named.
3. The target is placed into one of the parts.

For example, towards the end of the divisions in the *Sophist*, the Stranger states the following about belief-mimicry, a kind under which the sophist is eventually placed: “Let’s examine the belief-mimic the way people examine iron, to see whether it’s sound or has a seam in it.” (“Τὸν δοξομιμητὴν δὴ σκοπώμεθα ὥσπερ σίδηρον, εἴτε ὑγιῆς εἴτε διπλὸν ἔτ’ ἔχων τινὰ ἐστὶν ἐν αὐτῷ.”). A “seam” (διπλὸν) is discovered (268a1), and the two parts of belief-mimicry are associated with sincere and insincere imitators (“ἀπλοῦν μιμητὴν” and “εἰρωνικὸν μιμητὴν” respectively; 268a6-7). The latter kind applies to the sophist, and it is examined in turn:

ΞΕ. Τούτου δ’ αὖ τὸ γένος ἐν ἧ δύο φῶμεν;

ΘΕΑΙ. Ὅρα σύ. (10)

(b) ΞΕ. Σκοπῶ, καί μοι διττῶ καταφαίνεσθόν τινα· τὸν μὲν δημοσίᾳ τε καὶ μακροῖς λόγοις πρὸς πλήθη δυνατὸν εἰρωνεύεσθαι καθορῶ, τὸν δὲ ἰδίᾳ τε καὶ βραχέσι λόγοις ἀναγκάζοντα τὸν προσδιαλεγόμενον ἐναντιολογεῖν αὐτὸν αὐτῷ. (5)

ΘΕΑΙ. Λέγεις ὀρθότατα.

ΞΕ. Τίνα οὖν ἀποφαινόμεθα τὸν μακρολογώτερον εἶναι; πότερα πολιτικὸν ἢ δημολογικόν;

ΘΕΑΙ. Δημολογικόν.

ΞΕ. Τί δὲ τὸν ἕτερον ἐροῦμεν; σοφὸν ἢ σοφιστικόν; (10)

ΘΕΑΙ. Τὸ μὲν που σοφὸν ἀδύνατον, ἐπεὶ οὐκ εἰδότα

(c) αὐτὸν ἔθεμεν· μιμητῆς δ' ὄν τοῦ σοφοῦ δῆλον ὅτι παρ-  
 νύμιον αὐτοῦ τι λήψεται, καὶ σχεδὸν ἤδη μεμάθηκα ὅτι  
 τοῦτον δεῖ προσειπεῖν ἀληθῶς αὐτὸν ἐκείνον τὸν παντάπασι  
 ὄντως σοφιστὴν (268a9-268c4)

Stranger: And are there one or two kinds of insincere ones?

Theaetetus: You look and see.

Stranger: I'm looking, and there clearly appear to be two. I see that one sort can maintain his insincerity in long speeches to a crowd, and the other uses short speeches in private conversation to force the person talking with him to contradict himself.

Theaetetus: You're absolutely right.

Stranger: How shall we show up the long-winded sort, as a statesman or as a demagogue?

Theaetetus: A demagogue.

Stranger: And what shall we call the other one? Wise, or a sophist?

Theaetetus: We can't call him wise, since we took him not to know anything. But since he imitates the wise man he'll obviously have a name derived from the wise man's name. And now at least I see that we have to call him the person who is really and truly a sophist.

There are two series of seeing, naming, and placing in this passage, as outlined below:

**267e – 268d:**

1. The concept of belief-mimicry is examined until a “seam” is discovered, thereby yielding two parts (267e7-268a1).
2. The parts are named after sincere and insincere imitators (268a6-7).
3. In the final definition of the sophist, insincere imitation becomes part of the definition, thereby placing the sophist under the latter kind (268c8-268d4; Appendix B 9).

**268b – 268d:**

1. Insincere imitation is treated as a whole in its own right; upon inspection, it is seen to have two parts (268b1).
2. One part is named after the demagogue, the other after sophistry (imitation of the wise) (268b9-268c4).
3. The sophist is placed under the latter kind (268b11-268c4).

The same pattern is seen in a more condensed form when Socrates presents his portrait of madness to Phaedrus:

1. Madness has two parts (265a9).
2. They are named ‘human’ and ‘divine’ (265a9-10).
3. Love, the concept being defined, is placed under the latter (265b4-5).

In general, seeing opens a breach in a conceptual whole that at first appears to be opaque: its internal structure is hidden from reasoning, but becomes visible upon inspection. In some cases the breach is explicitly referred to as a “cut” (τομή) or “seam” (διπλόη), and it provides an access point to the parts of the whole. These parts are given names in order to articulate their boundaries and to indicate their content, and by means of the operation of placement the target to be defined is located in one of the parts.

It is not clear whether *seeing*, *naming*, and *placing* always operate in the same order. An alternative reading of the *Phaedrus*, for example, is that Socrates was given the name ‘ἔρως’ (love) by Phaedrus by way of Lysias’ speech (227c), then, once given the

name, he “placed” it under madness, which was seen to have two parts. Moreover, even in the three outlines above, the first step begins with a name: ‘belief-mimicry,’ ‘insincere imitation,’ and ‘madness’ introduce the concept in which parts are discovered. Since the final step also involves a name (e.g., ‘ἔρωξ’ in step 3 of the *Phaedrus*), an alternative reading is that in each case, a definition is formulated through intervals of reasoning demarcated by names. In other words, names articulate both the parts of a whole and the whole itself; as such they serve as “stepping stones” by which reasoning proceeds from a starting point toward a conclusion. Even under this model, however, seeing and placing both play a role; i.e., similarities and differences must be discerned and the parts of a whole must be ordered into a structure. In the *Phaedrus*, for example, it can be argued that the name ‘ἔρωξ’ (‘love’) arose only after a unity was discerned by bringing the “scattered many” (265d) into a single idea that was at first nameless. In any case, it is clear that seeing, naming, and placing work together to produce a definition – i.e., a framework that serves as the basis for further reasoning.

Returning to the definition of madness in the *Phaedrus*, Socrates has mixed feelings about his picture of madness: “We expressed the passion of love figuratively; perhaps it had a measure of truth in it, though it may also have led us astray”<sup>61</sup> (“καὶ οὐκ οἶδ’ ὅπῃ τὸ ἐρωτικὸν πάθος ἀπεικάζοντες, ἴσως μὲν ἀληθοῦς τινος ἐφαπτόμενοι, τάχα δ’ ἄν καὶ ἄλλοσε παραφερόμενοι”). When is a definition accurate? Given the above, a definition should reflect three things: (1) discernment of the correct number of parts; (2) names that accurately reflect the content and scope of the parts; and (3) the correct relations between the parts. In the *Phaedrus*, perhaps Socrates was wrong, divine madness does not have four parts, one of them being love. Perhaps love is, after all, a

<sup>61</sup> Translated after A. Nehamas and P. Woodruff (Plato 542), with modifications.

human ailment. But at the very least, Socrates' scheme clearly presents the underlying structure behind his definition of madness, and this structure can be used as the starting point for further discussion. For example, Socrates could compose a myth about Love and Strife, thereby clarifying the relation between love, madness, and other phenomena. Or, Socrates could employ the method of elenchus and argue against the scheme by finding an inconsistency in the definition. Or, he can syllogize and claim that since love is a part of divine madness, and since divine madness is a part of madness, love is therefore a part of madness. He can then question the first premise, and present another image of love by dividing madness differently. In each case, collection and division provide the groundwork for further discussion.

### **2.3 Reasoning and images**

This section will explore the relation between images and reasoning, paying particular attention to the role that images play in the *Statesman*. Since collection and division constitute a way of reasoning (see Section 1.2.5, pg. 41), exploring the relation between mental images and reasoning as described in the dialogues sheds light on the means by which collection and division operate. It will be argued below that collection and division rely on imagination and images to clarify and explain. Moreover, according to a passage in the *Laws*, in some cases images are not only useful but necessary for reasoning.

### 2.3.1 Three levels of reasoning: sensible images, imagination, and pure reason

The purpose of this section is to outline three levels of reasoning that are articulated in the *Statesman*: (1) reasoning through sensible images (e.g., paintings and diagrams), (2) reasoning through mental images, and (3) pure reason that is completely removed from sensible and mental imagery.

After a series of divisions that leads to the first definition of the *Statesman*, a distinction is made between two kinds of reasoning, both of which are contrasted with understanding through reason alone:

... ἀλλ' ἀτεχνῶς ὁ  
(c) λόγος ἡμῖν ὥσπερ ζῷον τὴν ἔξωθεν μὲν περιγραφὴν ἔοικεν  
ἰκανῶς ἔχειν, τὴν δὲ οἷον τοῖς φαρμάκοις καὶ τῇ συγκράσει  
τῶν χρωμάτων ἐνάργειαν οὐκ ἀπειληφέναι πω. γραφῆς δὲ  
καὶ συμπάσης χειρουργίας λέξει καὶ λόγῳ δηλοῦν πᾶν ζῷον  
μᾶλλον πρέπει τοῖς δυναμένοις ἔπεσθαι· τοῖς δ' ἄλλοις διὰ (5)  
χειρουργιῶν. (277b7-277c6)

...but our reasoning, just like a picture of a living creature, seems to have a good enough outline, but not yet to have received the clearness that comes from pigments and the blending of colors. And yet it is more fitting to portray any living being by speech and reasoning than by painting or any handicraft whatsoever to persons who are able to follow; but to others it is better to do it by means of works of craftsmanship.<sup>62</sup>

---

<sup>62</sup> Translated after H.N. Fowler (Henderson, *Philebus* 77), with modifications.



At the end of this passage (277c5-6), reference is made to the use of paintings and craftworks as teaching devices. In the first case (277c1-4), an image is formed in the mind or soul of the inquirers, “just like a picture of a living creature.”

A third kind of reasoning is related by the Eleatic Stranger in the *Statesman* at 285e-286a:

... τοῖς δ' αὖ μεγίστοις οὔσι καὶ τιμιωτάτοις  
 (286 a) οὐκ ἔστιν εἶδωλον οὐδὲν πρὸς τοὺς ἀνθρώπους εἰργασμένον  
 ἐναργῶς, οὗ δειχθέντος τὴν τοῦ πυνθανομένου ψυχὴν ὁ  
 βουλόμενος ἀποπληρῶσαι, πρὸς τῶν αἰσθήσεων τινα  
 προσαρμόττων, ἱκανῶς πληρώσει. διὸ δεῖ μελετᾶν λόγον ἐκάστου  
 δυνατὸν εἶναι δοῦναι καὶ δέξασθαι· τὰ γὰρ ἀσώματα, κάλλιστα (5)  
 ὄντα καὶ μέγιστα, λόγῳ μόνον ἄλλω δὲ οὐδενὶ σαφῶς δείκνυ-  
 ται, τούτων δὲ ἔνεκα πάντ' ἐστὶ τὰ νῦν λεγόμενα. ῥάων  
 (b) δ' ἐν τοῖς ἐλάττοσιν ἢ μελέτη παντὸς πέρι μᾶλλον ἢ περὶ  
 τὰ μείζω. (285e4-286b2)

For those beings that are greatest and most valuable, there is no image at all which has been worked in plain view for the use of mankind, the showing of which will enable the person who wants to satisfy the mind of an inquirer to satisfy it adequately, just by fitting it to one of the senses. That is why one must practice at being able to give and receive an account of each thing; for the things that are without body, which are finest and greatest, are shown clearly by reason only, and everything that is now being said is for the sake of these things. But practice in everything is easier in smaller things, rather than in relation to the greater.<sup>63</sup>

Thus, the greatest beings (μεγίστοις οὔσι) must be exhibited “by reason only” (“λόγῳ μόνον”) rather than through images (εἶδωλον). The general idea behind these two passages from the *Statesman* can be understood with the following scheme, with the most basic kind of reasoning listed first:

1. Reasoning through the perception of paintings and other works of handicraft (277c)

<sup>63</sup> Translated by C.J. Rowe (Plato 329), with modifications

2. Reasoning through images in the imagination (277b-c)
3. The use of reason alone (285e-286a)

The *Phaedrus* as well as the *Statesman* provide an example of the second kind of reasoning. The conceptual map of madness with the human kind on the “left” and the divine kind on the “right” is described by Socrates in terms of a likeness or figure: “We expressed the passion of love figuratively” (“καὶ οὐκ οἶδ’ ὅπη τὸ ἐρωτικὸν πάθος ἀπεικάζοντες”; 265b). Thus, while there is a difference between imagining an entire classificatory scheme on the one hand, and imagining a figure such as the *Statesman* or the *angler* as a person with a set of characteristics on the other, in both cases collection and division rely on imagination and images to clarify and explain. The imagination is used because thinking through reason alone is very difficult; when the method is used for the purpose of teaching (see Section 1.6.2, pg. 85) or as a way of practicing on things other than the greatest beings, as is the case in the *Statesman*, the second kind of reasoning is appropriate. Thus, when Socrates paints a picture of madness with the human on the “left” side and the divine on the “right” side, he is acting not only as a reasoner but also as a teacher – i.e., he speaks figuratively in order to clearly present his definition of love and madness to Phaedrus.

That images play an important role in collection and division is pointed out by recent commentators. Commenting on the use of division to define the angler and the sophist, Notomi states the following:

The contrast between a small and easy and a great and difficult object may correspond to that between the visible and the invisible. Only by analogy and using visible images are invisible things comprehended (cf. *Plt.* 285c4-286b3). Accordingly, the

sophist is investigated by appealing to similarities to other more familiar things: the angler is first taken up as a model and the painter is later chosen as another (233d3 ff.), but actually all the other images, namely, hunter, trader, fighter, purifier (a kind of medical doctor), painter, juggler, and mimic actor, are concrete images which illustrate the difficult object, the sophist. We need imagination to integrate these images and go beyond them to grasp the essence of the sophist (77).

This is the correct way of looking at the matter: images and the imagination serve as stepping stones that allow us to understand the target being defined. Images are not shunned by Plato; on the contrary, they are crucial elements of reasoning. An image can serve as a device that leads the inquirer to a point beyond the image.

The divided line in the *Republic* (509d–511e) is often taken as evidence that Plato had shunned the use of images because conjecture (εἰκασία) and its corresponding objects, images (εἰκόν), are placed in the lowest segment of the line. At first glance, this appears to conflict with the claim that images for Plato can play a useful and positive role in reasoning. However, if the divided line is itself an image, as some commentators such as Sonja Tanner have argued (92; see also Section 1.6.3, pg. 88), then the following question can be raised: is the image of the divided line an accurate image? In other words, does the divided line truthfully represent the four different kinds of cognition and their interrelations? If the divided line is an accurate image, then it is an example of an image that is useful and instructive. If on the other hand it is not accurate, there is no need to believe that conjecture and images are at the lowest segment of the line.

But even if, for the sake of argument, we accept the claim that the divided line is not an image, then one must look only a few pages further in the *Republic* to find an image that plays a positive and crucial role in the dialogue: at 515a4 the description of the Cave is referred to as an image (εἰκόν; see also Section 2.3.3, pg. 141). Moreover, as will

be discussed below, Plato's last dialogue, the *Laws*, explains that in some cases images are necessary – i.e., some objects cannot be reasoned about without the use of images.

This will be discussed further in the following section.

### 2.3.2 Images are necessary for reasoning

In the *Laws*, the use of images as devices for reasoning shows that in some cases images are not only useful but necessary for reasoning. At 897d, the Athenian Stranger employs the image of a lathe to answer the question, “What is the nature of the motion of reason?” (“Τίνα οὖν δὴ νοῦ κίνησις φύσιν ἔχει;”). In answer to this question, the Athenian Stranger states the following:

ΑΘ. Μὴ τοίνυν ἐξ ἐναντίας οἶον εἰς ἥλιον ἀποβλέποντες, νύκτα ἐν μεσημβρία ἐπαγόμενοι, ποιησώμεθα τὴν ἀπόκρισιν, ὡς νοῦν ποτε θνητοῖς ὄμμασιν ὀψόμενοι τε καὶ γνωσόμενοι (10) (ε) ἰκανῶς· πρὸς δὲ εἰκόνα τοῦ ἐρωτωμένου βλέποντας ἀσφαλέστερον ὄραν. (897d8-897e2)

Athenian: Still, in answering this question we mustn't assume that mortal eyes will ever be able to look upon reason and get to know it adequately: let's not produce darkness at noon, so to speak, by looking at the sun direct. We can save our sight by looking at an *image* of the object we're asking about.<sup>64</sup>

This is a curious passage. Here, an image serves as a means by which we can reason about the motion of reason. The idea here is that an image can serve as a device by means of which an elusive concept can be represented. Such a figurative device is necessary because if we look directly at reason, while paradoxically using reason itself to do so, we are in danger of being blinded, as if looking directly at the sun. In other words, a reasoner

---

<sup>64</sup> Translated by Trevor J. Saunders (Plato 1554)

may not be able to “step outside” of reason to examine the shape and motions of reason – to do so would require an abandonment of reason. For this reason, an image is used as a device not unlike a schematic or diagram that allows us to see, albeit indirectly, the answer to the question. In this case, at least, an image provides the *only* way to reason.

Equally important is the fact that the image is skillfully made or constructed. At 898a-b the Athenian Stranger explains how the motions of reason can be understood as the revolution of the turning wheels of a lathe. He states that by using this image to understand the motions of reason, a skilful use of “beautiful images by means of reasoning” (“λόγω καλῶν εικόνων”) is being employed:

ΑΘ. Τὸ κατὰ ταῦτὰ δῆπου καὶ ὡσαύτως καὶ ἐν τῷ αὐτῷ  
καὶ περὶ τὰ αὐτὰ καὶ πρὸς τὰ αὐτὰ καὶ ἓνα λόγον καὶ τάξιν  
(b) μίαν ἄμφω κινεῖσθαι λέγοντες, νοῦν τὴν τε ἐν ἐνὶ φερομένην  
κίνησιν, σφαῖρας ἐντόρνου ἀπεικασμένα φοραῖς, οὐκ ἄν ποτε  
φανεῖμεν φαῦλοι δημιουργοὶ λόγῳ καλῶν εικόνων. (898a8-b3)

Athenian: Take reason on the one hand, and motion in a single location on the other. If we were to point out that in both cases the motion was determined by a single plan and procedure and that it was regular; uniform; always at the same point in space; around a fixed center; in the same position relative to other objects; and were to illustrate both by the example of a sphere being turned on a lathe, then no one could ever show us up for incompetent makers of beautiful images by means of reasoning.<sup>65</sup>

Here, an image wrought by reason (λόγω καλή εικόν) is constructed through the use of named parts such as ‘σφαῖρα’ (globe or lathe) and ‘κίνησις’ (motion). The reference to motion around a fixed center tells us how the motions of reason are arranged in an imaginary space. By seeing the motions as spherical, the placement of each part of the image is made clear, as if each part were arranged as a point on a geometric figure or as the part of a schematic. In short, reason is used to construct an image that clarifies the

<sup>65</sup> Translated after Trevor J. Saunders (Plato 1555), with modifications

structure of an object or phenomenon that is difficult, if not impossible, to conceive by means of reason alone.

### 2.3.3 Images and truthfulness

It is frequently assumed in the secondary literature that Plato believed that images have no philosophical value; rather, images are to be mistrusted as sources of error and confusion. For example, Nigel Thomas states the following:

Indeed, although [Plato's] writings contain at least three different words (*eidolon*, *phantasma*, and, most frequently, *eikon*) that may often, in context, reasonably be translated as "image," Plato does not seem to use these terminological resources to mark any particularly important distinctions. In effect, he lumps mental images (including imprints in the wax of memory, and paintings on the canvas of the soul) together with other sorts of images, such as sculptures, paintings, shadows, and reflections, and assigns them all to the very lowest rung of the divided line that represents the hierarchy of being (*Republic* 509 d). All are imperfect, and thereby misleading, copies of material things, which are themselves, of course, merely imperfect instantiations of the eternal forms, the proper objects of philosophic enquiry. Images (mental or otherwise) are doubly removed from the forms, and are to be shunned as a likely source of error and delusion.

One could make a similarly erroneous reading of Plato's attitude toward discourse (*λόγος*). According to the dialogues, discourse lends itself to abuse: it is used by sophists to bewitch children (*Sophist* 234c), rhetoricians use it to inflame crowds (*Phaedrus* 267c), and the young use discourse to corrupt their parents and disseminate confusion (*Philebus* 15d-e; see Section 1.5.1, pg. 66). But it would be wrong to say that because of this misuse, discourse in general should be shunned as a source of error. It is because discourse is essential to knowledge and reasoning that its misuse needs to be highlighted. Similarly, it is not the use of images that is misleading, but their misuse. Images are

central to working out problems in the dialogues and for elucidating difficult concepts. The classic example of an image that plays a positive role in the dialogues is Plato's image of the Cave, which is explicitly referred to as an image (εἰκῶν) at 515a4 in the *Republic*.

In addition, it is noteworthy that the dialogues are replete with vivid images that are used to explain the method of collection and division and its correct use. Thus, Socrates paints the picture of the correct use of division by using the image of a skilful butcher who cuts along the natural joints of an animal (*Phaedrus* 265e). Similarly, in the *Sophist*, the Eleatic Stranger advises Theaetetus to look for a point of division as if inspecting a piece of iron for a seam (267e). While Plato in some cases was very critical of art and image-making (e.g. in the *Republic*), as a philosopher-poet Plato made ample use of vivid images for making his ideas clear. Of course, he did not have to: he was free to rely on more abstract terminology. We see this in the *Parmenides*, for example, where eight deductions are explored with scant use of the usual Platonic imagery. The fact that he chose to use vivid images and metaphors in the *Phaedrus* and other dialogues that illustrate collection and division indicates that Plato thought that images are at least instructive for explaining how collection and division operate.<sup>66</sup>

---

<sup>66</sup> The significance of images in reasoning is not restricted to ancient times, nor is it limited to non-deductive reasoning. For example, C.S. Peirce states that deductive reasoning “involves an element of observation; namely, deduction consists in constructing an icon or diagram the relations of whose parts shall present a complete analogy with those of the parts of the object of reasoning, of experimenting upon this image in the imagination, and of observing the result so as to discover unnoticed and hidden relations among the parts.” (3: 212-13). Thus, Peirce recognizes the intimate relation between deductive reasoning, the imagination, and reasoning in terms of wholes and parts.

Regarding ancient thought in particular, similar observations may be made about Aristotle. In fact, the *Analytics* is replete with visual reasoning, so much so that more than one commentator has put forth the conjecture that Aristotle had used diagrams to represent the logical relations between terms of a syllogism. Benedict Einarson, for example, proposed that Aristotle had used diagrams of “horizontal lines of varying length placed one above the other” (168). In this model, the lengths of the lines represent the extensions of the terms, and predication is understood in terms of whole-part relations, where the predicate is a whole of which the subject is a part (Einarson 168). Thus, the major term of the first figure is represented by the

Images are ideal for reasoning because they clarify, just as the drawn square in the *Meno* does, and they are easily revised, just as the appearances and portraits of the target in the *Sophist* and the *Statesman* are. But Plato makes it clear that images, like names, can be deceptive. In the *Sophist*, the Eleatic Stranger makes a distinction between two kinds of image (εικόν), *likeness-making* and *appearance-making*, which are defined as follows:

ΞΕ. Μίαν μὲν τὴν εἰκαστικὴν ὁρῶν ἐν αὐτῇ τέχνῃ.  
ἔστι δ' αὐτὴ μάλιστα ὁπόταν κατὰ τὰς τοῦ παραδείγματος  
συμμετρίας τις ἐν μήκει καὶ πλάτει καὶ βάθει, καὶ πρὸς  
(ε) τούτοις ἔτι χρώματα ἀποδιδούς τὰ προσήκοντα ἐκάστοις, τὴν  
τοῦ μιμήματος γένεσιν ἀπεργάζηται. (235c8-235d3)

Stranger: One type of imitation I see is the art of likeness-making. That's the one we have whenever someone produces an imitation by keeping to the proportions of length, breadth, and depth of his model, and also by keeping to the appropriate colors of its parts.<sup>67</sup>

ΞΕ. Τί δέ; τὸ φαινόμενον μὲν διὰ τὴν οὐκ ἐκ καλοῦ  
θέαν εἰκέναι τῷ καλῷ, δύναμιν δὲ εἶ τις λάβοι τὰ τηλικαῦτα (5)  
ικανῶς ὁρῶν, μηδ' εἰκὸς ᾧ φησιν εἰκέναι, τί καλοῦμεν; ἄρ'  
οὐκ, ἐπεὶ περ φαίνεται μὲν, εἰκε δὲ οὐ, φάντασμα; (236b4-7)

---

longest line, and the minor by the shortest line.

Other commentators have also argued that the syllogistic was understood diagrammatically. In his commentary on the *Prior Analytics*, Ross bases his interpretation of some passages on the idea that Aristotle had employed diagrams to explicate the syllogistic. For example, at *Prior Analytics* 1.5 28a14-15, Aristotle states “τίθεται δὲ τὸ μέσον ἔξω μὲν τῶν ἄκρων, ἔσχατον δὲ τῇ θέσει.” (“The middle is placed outside the extremes and is last in position.”\*). Commenting on this passage, Ross states that “His meaning is simply that *in his diagram* the middle term comes above both extremes in the second figure, and below both in the third, and that in his ordinary formulation the middle term does not come between the extremes in either figure...” (307, emphasis added). It is important to note that under this interpretation, the word ‘τίθεται’ connotes not a figurative kind of placement, one associated only with the concepts of assumption or supposition, but a literal placement in a diagram. That this interpretation is even possible shows that the operation of *placing* and visual reasoning in general play an important role in Aristotle’s conception of the syllogistic.

\* Translated by Robin Smith (Smith 9)

<sup>67</sup> Translated by Nicholas P. White (Plato 256), with slight modifications.



Stranger: Now, what are we going to call something that appears to be like a beautiful thing, but only because it's seen from a viewpoint that's not beautiful, and would seem unlike the thing it claims to be like if you came to be able to see such large things adequately? If it appears the way the thing does but in fact isn't like it, isn't it an appearance?<sup>68</sup>

The first kind of image is a “likeness” since it is like (ἔουκα; 236a8) the thing it depicts (235c8-235d3), while the second kind of image is an “appearance” or “apparition” (φάντασμα), which includes painting and the rest of imitation (236b4-7). The latter kind of image only seems beautiful, when it is not – the makers of these images abandon the truth (“οὐ χαίρειν τὸ ἀληθὲς ἔασαντες οἱ δημιουργοὶ”; 236a4).

The distinction between likeness and appearance is a crucial one, and recent commentators are keen to emphasize this distinction as well as the role of images in general in the dialogues. Notomi states the following:

The dialogue concerning the definitions of the sophist as a whole illustrates and exemplifies how to distinguish between true and false appearances. We clearly see that the philosophical inquiry makes a likeness, which is similar, and discerns and rejects an apparition, which appears to be similar but is actually dissimilar (278).

As stated above, a likeness is a species of image; unlike an apparition, a likeness is “a correct image of the original” (Notomi 153).

However, the difference between appearance and likeness not only serves as a means by which the sophists can be accused of appearance-making, it also applies to collection and division. More specifically, one can always ask if the definitions produced by collection and division only *seem* to be true. After the sixth and penultimate definition is formulated, the sophist seems to be no more than a lineage of ever-changing apparitions descending from the initial divisions of the angler. Before the final definition

---

<sup>68</sup> Translated by Nicholas P. White (Plato 256), with slight modifications.

is formulated, Theaetetus expresses doubt as to whether the Stranger will ever hit upon the truth:

ΘΕΑΙ. ... ἀπορῶ δὲ ἔγωγε ἤδη διὰ τὸ πολλὰ  
(c) πεφάνθαι, τί χρή ποτε ὡς ἀληθῆ λέγοντα καὶ δυσχυριζόμενον  
εἰπεῖν ὄντως εἶναι τὸν σοφιστήν. (231b9-231c2)

Theaetetus: ... But the sophist has appeared in many different

ways. So I'm confused about what expression or assertion could convey the truth about what he really is.<sup>69</sup>

Thus, while a true (ἀληθής) account is the goal, it is an elusive target. That a definition is an image that may or may not be true is not unique to the definitions of the sophist. In the same dialogue, the Stranger refers to beliefs (δόξα) and definitions (λόγος) in general as images:

(e) ... τούτων γὰρ μήτ' ἐλεγχθέντων μήτε ὁμολογηθέντων σχολῆ  
ποτέ τις οἶός τε ἔσται περὶ λόγων ψευδῶν λέγων ἢ δόξης,  
εἴτε εἰδώλων εἴτε εἰκόνων εἴτε μιμημάτων εἴτε φαντασμάτων  
αὐτῶν.... (5) (241e1-4)

... We'll never be able to avoid having to make ourselves ridiculous by saying conflicting things whenever we talk about false statements and beliefs, either as copies or likenesses or imitations or appearances...<sup>70</sup>

That definitions or accounts (λόγοι) are also appearances is recognized by recent commentators. Notomi states that “Interestingly enough, it is a definition (*logos*) which appears and reveals the sophist's new face, just as the sophist is found ‘in the definition which now *appears*’ [231b6-7]. In this way, the figures of the sophist (presented as the

<sup>69</sup> Translated by Nicholas P. White (Plato 251), with modifications.

<sup>70</sup> Translated by Nicholas P. White (Plato 262).

definitions of the sophist) *appear* through the inquiry...” (88). This point is reinforced by Richard Patterson, who, discussing the dialogues as a whole, emphasizes that there is an important parallel between λόγοι and images:

... both images and *logoi* are *about* something. The primary *logoi* of *Sophist* 262e are about something, as are the *doxai* of *Republic* 478b which are imaged in *logoi*. Moreover, images purport to reveal something about their models, just as *logoi* say something about their subject ... The general idea is that images in their own way tell us something about their models, the image being correct or incorrect depending on whether what it tells us is true or false (111-12).

Additionally, Patterson claims that the message of the *Phaedo* (100a) is that “Studying things in *logoi* is implicitly agreed by all to be a study of things in images, the idea of *logoi* as *mimēmata* of things being entirely commonplace” (28). Furthermore, he observes that the concepts of *true* and *false* extends to images. Commenting on the analogy of the scribe and the painter in the *Philebus*, Paterson remarks that “The true *eikōn* [image] is that which illustrates a true *logos* or *doxa* [opinion]: As the true *logos* states things as they are, so the true picture pictures things as they are” (113). In other words, just as λόγοι (i.e., definitions or accounts) may be true or false, so too may images.

This raises the question as to which criteria, if any, should be used in evaluating the truthfulness of an image. More specifically, given the definition of logic as a step-by-step form of reasoning that aims toward the truth (Section 1.5.3, pg. 74), how is one to know if an image or representation produced by collection and division is a true one? This question will be revisited in Section 6.3, where criteria provided in the *Laws* will be discussed in the context of Meno’s paradox (pg. 273). It will be argued that knowledge of

the Forms may be one route by which an image may be compared with its object, thereby providing objective criteria by which the accuracy of a definition may be judged.

## 2.4 Two senses of the word ‘method’

The purpose of this section is to present the argument that collection and division are not always applied as a deliberate, skill-based procedure. For example, collection and division as described in the *Phaedrus* are two forms or principles of reasoning that are not deliberately imposed but work more or less as an undercurrent of thought and speech. In contrast to this is the picture of the method as a rule-based procedure as shown in the *Statesman* and the *Sophist*.

Plato introduces collection and division at *Phaedrus* 265c-d, where Socrates states “τούτων δέ τινων ἐκ τύχης ῥηθέντων δυοῖν εἰδοῖν” (“but in these chance utterances were involved two principles”<sup>71</sup>). The “chance utterances” (“ἐκ τύχης ῥηθέντων”) refer to a discussion on the nature of love (ἔρωϛ) and its relation to madness (μανία). In Socrates’ second speech, madness was divided into two kinds, *human* and *divine*, and the latter was sub-divided into four kinds, one of which is love (265b). The “δυοῖν εἰδοῖν” (“two principles”) at 265c9 refer to collection and division. It is not immediately evident what “εἰδοῖν” means, and the term is not consistently translated. Translations of “εἰδοῖν” in this passage include “principles” (Goold 533, Rowe 103), “kinds” or “kinds of things” (Rowe 199; Plato 542), “procedures” (Hackforth, *Phaedrus* 132), and “forms” (Griswold 179). Rowe notes that the term ‘εἶδος’ (along with its kindred term, ‘ιδέα’) “allows Plato to talk

---

<sup>71</sup> Translated by H.N. Fowler (Goold).

about the features of particular collections of items without having to specify precisely what they are collections of” (155).

But this passage of the *Phaedrus* is not completely silent on the question of how division is performed; Plato does specify that λόγος (here understood as “discourse” – i.e., speech or reasoning or a combination thereof) is the agency of both collection and division. This is made clear three times in *Phaedrus* 265e-266a. First, it is “τὸ λόγῳ” (i.e., two “discourses” or “reasonings”) that posit the single idea of madness (265e). Second, it is one of the “τὸ λόγῳ” that cuts or divides (“τεμνόμενος”) the “left side” or human part of madness (266a). Finally, the remaining λόγος of the pair “leads” (“ἀγαγὼν”) to the right-hand side of madness, where the divine part of madness is sub-divided into four sub-kinds (266a).

The term “λόγῳ” at *Phaedrus* 265e is translated as “speeches” (Hackforth, *Phaedrus* 133; Plato 542) and “discourses” (Goold 535). Under the first translation, one could argue that there is nothing significant in Plato’s terminology: he is simply saying that Socrates composed “τὸ λόγῳ” (i.e., the two “speeches”), and it is really Socrates who is practicing collection and division, using λόγος as a means to convey the results to his audience. Under this interpretation, a practitioner of collection and division would employ λόγος just as a rhetorician might use λόγος in a variety of ways to persuade his or her audience.

But Plato – or Socrates, as the case may be – was free to express this idea differently. He could have used the Greek equivalent of wordings such as the following: “In my first speech, I divided the left hand side of madness ... and in my second speech, I led the discussion to the right hand side ...” (similar uses of the term ‘λόγος’ appear at

257e and 260b). But the actual Greek wordings in this passage of the *Phaedrus* make it clear that the two discourses or reasonings, not their author, are the actors; i.e., it is λόγος, not Socrates, that collects, divides, and leads. Not even the instrumental dative is used – instead, λόγος occurs in the plural nominative.

The idea that λόγος, as opposed to an individual such as Socrates, is the active agency when collection and division are applied, may be contrasted with what is seen in dialogues such as the *Statesman* and the *Sophist*, where a specific technique or procedure is applied to arrive at a definition, with steps along the way meticulously described. For example, in the *Sophist*, the Eleatic Stranger carefully illustrates the method using the angler as a model. Here, each step of the method is illustrated for the benefit of Theaetetus, and the definition or final account of the angler is neatly wrapped up in the end. The Stranger's attitude in this case resembles the confidence that Socrates displayed when he was giving instructions in how to double the square in the *Meno*. In both cases, the deliberate application of a specific kind of reasoning is illustrated. In addition, in the *Statesman*, applying the method is described more than once as “work” (ἔργον, 258c, 284c), and as with the *Sophist* it is evident that a great deal of careful and methodical attention is used to apply the method and to reach a conclusion.

Thus, there are two ways in which collection and division can be understood: (1) collection and division do not require effortful and skill-based activity, or (2) they do require such activity.

In defense of the former reading is the fact that in the *Phaedrus* Socrates recognizes collection and division in hindsight – i.e., *after* his speeches are composed – and refers to the speech in which they are employed as “chance utterances”: “τούτων δέ

τινων ἐκ τύχης ῥηθέντων δυοῖν εἰδοῖν” (“but in these chance utterances were involved two principles”<sup>72</sup>; 265c). Moreover, as explained above, Socrates was led by discourse – i.e., λόγος as speech or reasoning ‘led’ him to the ‘left’ and ‘right’ hand parts of madness. The image here is that of an imaginary space divided into two halves, and Socrates, rather than making his way to a known destination, is brought to it and thereby discovers it.

In the introduction to *Rationality in Greek Thought*, M. Frede contrasts the present-day understanding of reason with that of ancient Greece. Regarding the former, he states that “We tend to think of reason primarily as a formal ability to reason, as an ability to process data with which reason is provided from the outside, and to which, perhaps, it is neutral, in such a way as to calculate what it is reasonable to assume given certain assumptions...” (M. Frede 5). Moreover, he states that the present-day notion of the will “has had the effect that reason has come to be seen as having merely a cognitive function.” (M. Frede 6) This is in stark contrast to the ways in which Socrates and Plato portray reason. Instead of a willful human agent using reason as a means to calculate, in the dialogues reason is one part of an individual, an agent with its own volition and its own desires. Frede states that the division of the soul in the *Republic* (473bff) is “crucially based on the assumption that there are conflicting desires which we can only understand, Plato argues, if we assume that there are different parts of the soul, each with its own needs and interests” (7). Thus, when Plato divides the soul in the *Republic*, “he not only explicitly speaks of the desires of reason, he is also firmly committed to this view to the extent that the division of the soul is based on it” (M. Frede 7). Frede’s assessment of the portrayal of reason in the dialogues is on par with the role that λόγος plays in the *Phaedrus*. Instead of a willful human agent processing and calculating data to

---

<sup>72</sup> Translated by H.N. Fowler (Goold)

reach a conclusion, a different picture is presented: reason makes its way to a conclusion without the calculated use of a set of rules.

Understanding ‘μέθοδος’ as ‘way’ (see Section 1.5.2, pg. 71) unifies the seemingly opposed pictures of collection and division as elementary forms of reasoning on the one hand, and as systematic ways of thinking that require deliberate effort and the meticulous application of rules on the other. The word ‘μέθοδος’ can be understood in the broader sense as ‘μέθ-όδός,’ i.e., ‘with road’; in this sense it is a ‘way’ to arrive at something that is sought, leaving open the possibility that not all ways are followed through a set of deliberately-applied rules.

To use a mathematical analogy, in arithmetic, one can perform basic operations such as counting and adding small numbers without specialized training. But for representing and manipulating large numbers, a technique or device such as long addition, and the use of numerical symbols arranged according to specific rules, is required. Understood in the latter sense, collection and division in the *Phaedrus* serve as deliberately-applied principles for the composition of Socrates’ speech. In other words, under this interpretation collection and division allow Socrates to purposefully delineate the overall structure of his speech with careful planning. But in the former case, collection and division are more like the activity of counting and similarly elementary ways of reasoning. Understood in this sense, collection and division are basic and natural ways of reasoning that do not require the deliberate application of rules as part of a skill-based procedure.



## 2.5 Collection and division and the unlimited

In the *Philebus*, the method of collection and division is described in relation to ‘ἄπειρον’ (‘indeterminate,’ ‘unlimited,’ ‘indefinite’). As discussed in Section 1.2.4 (pg. 38), depending on the interpretation, ‘ἄπειρον’ can refer to the variable characteristics of particulars, to an unlimited number of individuals, or to an undifferentiated continuum (Gosling 62). To outline the differences between each interpretation, consider sound (φωνή). Under the first interpretation, each instance of a spoken letter such as ‘a’ will have subtle variations in pitch and tonality, and there are unlimited variations and combinations thereof that make each instance a unique occurrence. Under the second interpretation, there are unlimited occurrences of each letter. Under the third interpretation, sound is a continuum in the sense that there are unlimited gradations of pitch, just as there are countless gradations in the color spectrum.

The first reading is especially interesting because it is related to the problem of individuals: while Forms remain the same over time, individuals are in flux, and therefore it is difficult, if not impossible, to define an individual apart from universals. Gosling illustrates this interpretation using the image of a Persian cat. A particular cat of this sort exhibits the form of its species and in this respect it is determined, and at the level of the *infima species* “precise numerical specifications” – e.g., proportions of hardness and softness, heat and coolness – can be given, but below this level of specification the indeterminate is reflected in “a wishwash of potentiality for varying temperatures and solidity that is matter” (Gosling 156). This reading of ἄπειρον – i.e., as the variable characteristics of individuals – will be discussed further in Section 6.3.2 (pg. 275), where

it will be argued that beliefs as well as organisms can also be seen as individuals with idiosyncratic variations.

Returning to the division of φωνή in the *Philebus*, we can see that while sound is a continuum, it also has a structure. As voice, sound is divided into three kinds (vowels, consonants, and mutes); as music, sound is divided into intervals and the high and low and fast and slow (26a). In both cases, the unlimited nature of sound is tempered by limit – i.e., sound is shaped by the compresence of limit and the unlimited, and collection and division are known as “the divine gift” through which the structure of sound may be discerned.

In the *Philebus*, Socrates describes Theuth’s discovery of the alphabet (18b5-18d2; see Appendix A 49). Here, Theuth is credited with having discovered the structure of voice (φωνή): while voice is unlimited (ἄπειρον; 18b5), Theuth was the first to discover that it has parts. Moreover, the parts can be named and ordered, thereby defining the alphabet. Regardless of which of the three readings of ἄπειρον above is accepted, this passage illustrates how the three operations of collection and division yield the structure of voice:

1. Seeing: Theuth was the first to discover that voice has *parts*: i.e., voice is divided into kinds (18b7) .
2. Naming: The three kinds are named ‘vowels,’ ‘consonants,’ and ‘mutes’ (18b7-c3).
3. Placing: Each of the three kinds are further subdivided so that each letter of the alphabet is placed into one of the three parts of voice (18c3-5).

The process is similar with music, where ‘φωνή’ (sound) is *seen* as a whole of named parts, where each part is placed within a structure. For example, the musical intervals of “high,” “low,” and “intermediate” (ὄξύ, βαρὺ, and ὁμότονον) are named as such and placed within a structure.

Of course, music is heard and not seen, but it is often visualized using a geometric device such as a line. Recent commentators describe such a device in terms of seeing, representation, and placement. For example, in his commentary on Theuth’s discovery of three kinds of voice (that which “can be spoken alone,” that which “cannot be spoken alone,” and the semi-vowels) Gosling states the following (emphasis added):

This again [i.e., the division of voice into three kinds] seems to invite linear *representation*, and what Theuth does is to *see* that there are main points on the continuum, and that permissible combinations can be expressed as relations between these points. There are many sounds which, from the point of view of knowing one’s letters, are simply not *represented*, but fall *somewhere* on the *apeiron*. The discovery of the alphabet-system is the discovery that the vocal-sound phenomenon allows of systematization into elements such that permissible sound combinations are *represented* by combinations of elements... (171)

Clearly, understanding a phenomenon such as voice in terms of a “linear representation” in which points are “seen” or in which letters fall “somewhere,” is to understand what is essentially invisible – voice – in terms of an image, in this case a geometric device that represents a continuum as a whole of parts.

In “Plato’s Description of Division,” A.C. Lloyd argues similarly: he states that collection and division are “the discovery of the One in the Many” (105). Roughly speaking, Many is equivalent to ἄπειρον, “the infinite ... number of parts of a whole,” while the One refers to a whole or species that can be divided into a *finite* number of parts

(A. Lloyd 105). Division is likened to dividing a continuum (e.g., a line in geometry or a sensory experience such as sound) into parts. To use an example from *Philebus*, Theuth, when he divides voice into letters, mirrors a geometer who divides a line into segments. In this sense, Plato had recognized “identity of logical structure” between a continuous magnitude and the world of experience and knowledge (A. Lloyd 105).

Gosling and Lloyd are correct in their assessment of collection and division as portrayed in the *Philebus*: visualization of the invisible (e.g. voice, music) using a device such as a line in which parts are placed clarifies the structure of the object or phenomenon being studied. More specifically, images are powerful devices by which the structure of a continuum is brought to light.

## 2.6 Conclusion

When a framework is constructed through collection and division, three operations are at work: *seeing*, *naming*, and *placing*. Seeing is the discernment of conceptual wholes and parts. More specifically, through the recognition of similarities, seeing brings many into a whole – i.e., into a unified concept; through the recognition of differences, seeing discerns the parts of a concept. Parts are not only discerned, however, they are *named* and *placed*. The function of naming is to articulate the conceptual boundaries between each of the parts and to indicate the contents of the parts. The function of placing is to arrange the parts in an ordered whole, thereby revealing the interrelations between the parts.

The importance of the three operations can be explained in a negative sense: without seeing, there is nothing to name – i.e., without a coherent structure of similarities and differences, there is only a “scattered many.” Without naming, the parts of a whole and the whole itself remain inarticulate, and they cannot be consistently discerned or communicated. Without placing, the parts of a whole remain unordered and structureless. However, there are cases in which a definition is formulated, but only incompletely – i.e., a partial application of seeing, naming, and placing will yield a partial framework or in other words a “loose structure” of sorts. This will be discussed further in Chapter 5.

Seeing, naming, and placing are trivial in the true sense of the word: they are both elementary and commonplace. And it is precisely because they are “trivial” that they are of fundamental importance and on par with other basic forms of reasoning, such as arithmetic. The three operations have more abstract applications (e.g., we can name a class of numbers), and they also underlie more mundane forms of reasoning, but they serve the same purpose in the inferential process. In other words, whether one is learning how to recognize letters, or mapping out the forms of madness, reason is moved forward to a conclusion through the same operations.

## Chapter 3

### Framework Structure

#### 3.1 Introduction

As stated in Section 1.1, the purpose of this work is to defend the thesis that collection and division define logical frameworks that underlie deductive and non-deductive reasoning. This chapter complements Chapter 2: while the previous chapter describes the means by which a framework is constructed, this chapter will discuss theoretical models that tell us what a framework is. More specifically, while Chapter 2 describes how a framework is constructed through three operations, the present chapter describes what these operations produce. However, recent commentators are by no means settled on this issue; according to some, collection and division produce hierarchical genus-species trees, while others argue that the method produces non-hierarchical structures of overlapping parts. Section 3.2 will discuss four models for interpreting the logical structures that are produced by collection and division. For reasons given below, in this work these models have been dubbed ‘Tree,’ ‘Fabric,’ ‘Lens,’ and ‘Mesh.’ Each of these names corresponds to a device or image for interpreting a framework. It will be argued that models that allow for non-hierarchical frameworks – i.e., logical structures in which parts overlap – most accurately describe the results of collection and division.

Section 3.3 complements Section 3.2 by arguing that there are at least two perspectives that apply to a framework that defines individuals. More specifically,

regardless of precisely what kind of structure is produced by collection and division, there is the special case in which the reasoner is the target being defined as opposed to one who is defining another through collection and division. In this case, structural errors in a framework can be recognized, allowing the target to overturn the definition.

### 3.2 Four models: Tree, Fabric, Lens, and Mesh

Sections 3.2.1 - 3.2.4 will discuss four models or interpretations of collection and division that have been presented in secondary literature. Section 3.2.1 will discuss the idea that a framework is equivalent to a genus-species tree. Section 3.2.2 will present arguments by Julius Moravcsik and Laura W. Grams that collection and division produce something like a “woven fabric” in which conceptual threads overlap and intertwine. Section 3.2.3 will discuss Kenneth Sayre’s argument that the method is based on symmetric relations between Forms. Section 3.2.4 will discuss M.M. McCabe’s argument that collection and division produce a structure that serves as a “context” in which individuals are placed.

It will be argued that the second and third models, Fabric and Lens, most accurately describe the structures produced by collection and division. These models capture relations and structures that are not hierarchical, and for this reason they are consistent with some of the divisions seen in the dialogues. Moreover, these models respect the fact that collection and division underlie everyday reasoning – i.e., collection and division enable us “to speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b; see Section 1.6.3, pg. 88). In short, the Fabric and Lens models are broad enough to

encompass both hierarchical and non-hierarchical structures, and for this reason they most accurately reflect the illustrations of collection and division in the dialogues.

### 3.2.1 Tree

The conceptual scheme of the genus-species tree is seen at least as far back as Porphyry's *Introduction*. The *Introduction* was a standard textbook for over 1,000 years, and as Barnes points out, it is not a commentary on the *Categories* but an introduction to logic and philosophy in general:

The *Introduction* is not in the least like the several ancient texts which are generally introductions to this or that work. In any case, Porphyry himself indicates for what study the *Introduction* provides preparatory material: not for a study of the *Categories*, but for a study of the theory of predication, and the construction of definitions, and, in general, matters connected with division and with proof (1.3-6). That is to say, Porphyry presents his essay as a preparation for the study of logic (Porphyry xv).<sup>73</sup>

As will be shown below, the genus-species tree often holds sway in present-day interpretations of collection and division. Moreover, as will be explained below, Porphyry also explains how collection and division can be understood as “movements” along a genus-species tree. In short, Porphyry's *Introduction* is relevant and worthy of study for two reasons: (1) over the centuries it has been influential in the study of logic and division, and (2) it clearly articulates underlying aspects of genus-species trees and as

---

<sup>73</sup> Barnes argues that Porphyry's essay serves as an introduction to logic and to philosophy, and as such it is “accidentally” an introduction to the *Categories* (“Introduction,” xv). In my view, Barnes is correct, although it is beyond the scope of this work to discuss in detail the textual evidence that supports his claim. In any case, regardless of its connection or lack thereof to the *Categories*, Porphyry's *Introduction* is invaluable for a better understanding of division and logic and for clarifying the basic concepts that underlie genus-species trees.



such it is a useful text for uncovering some of the properties of these structures as understood in ancient times up to the present day.

The logical structure of the genus-species tree is defined by a hierarchy of kinds and sub-kinds, with the more general kinds “containing” (περισχεῖν) the more specific ones (*Introduction 5.14-17*). The *summum genus* is the most general kind; it is all-inclusive of the species “below” it. Each species that falls under the *summum genus* is distinguished from other species by *differentia*, properties that mark off and define each species. At the lowest level of the tree are the *infima species*: these are the most specific kinds. Beyond this level are the countless individuals that fall under the *infima species*.

References to the image of a logical tree are very common in recent commentaries on the method of collection and division. For example, Leslie Brown describes the primary function of the method in the *Sophist* and the *Statesman* as locating the target to be defined on “one branch” of a “whole tree-structure” (154). Similarly, Constance Meinwald states, “I believe the *Philebus* should be understood in the context of Plato’s initiative to treat forms by giving genus-species trees: that is, to understand the kinds in question in accordance with the process of ‘Platonic division.’” (“The *Philebus*” 492). Likewise, Mary Louise Gill refers to a “top” and “bottom” of a “tree” when contrasting different modes of the method of collection and division (“Division and Definition,” 192-3).

One of the advantages of the Tree model is that the strict ordering of kinds and sub-kinds can serve as a basis for two logical operations: one for moving “up” the tree to the more general, and one for moving “down” the tree to the more specific. Porphyry refers to these movements as “ascent” and “descent” as follows:

...κατιόντων

μὲν οὖν εἰς τὰ εἰδικώτατα ἀνάγκη διαιροῦντας διὰ πλῆθους ἰέναι,  
ἀνιόντων δὲ εἰς τὰ γενικώτατα ἀνάγκη συναρῆναι τὸ πλῆθος εἰς ἓν· συνα-  
γωγὸν γὰρ τῶν πολλῶν εἰς μίαν φύσιν τὸ εἶδος καὶ ἔτι μᾶλλον τὸ γένος,  
τὰ δὲ κατὰ μέρος καὶ καθ' ἕκαστα τοῦναντίον εἰς πλῆθος ἀεὶ διαιρεῖ τὸ (20)  
ἓν (6.16-20).

So, when we are descending to the most special items, it is necessary to divide and to proceed through a plurality, and when we are ascending to the most general items, it is necessary to bring the plurality together. For species — and still more, genera — collect the many items into a single nature; whereas the particulars or singulars, in contrary fashion, always divide the one into a plurality (7).<sup>74</sup>

In Porphyry's scheme, ascent corresponds to collection (συναίρω), descent to division (διαίρω). As one moves “up” the tree, a movement from the more specific (i.e., from the species) to the more general takes place. For example, one might start at the bottom of a tree with an *infima species* such as *Persian cat* and move up to *cat*, *mammal*, and *animal*. Similarly, as one moves “down” the tree, the reverse movement from general to specific takes place; e.g., one might start with the genus *animal* and branch off to more specific kinds such as *mammal*, then *cat*, and so on until an *infima species* such as *Persian cat* is reached. In short, “higher” corresponds to more general, “lower” to more specific. Thus, collection and division correspond to movements along a hierarchy of kinds.

Another advantage of the Tree model is that it reflects natural and familiar ways of reasoning; more specifically, it is similar to the kind of reasoning exhibited in a family tree, in which a common ancestor serves as the highest point in a tree. Just like the individuals of a family tree, everything in a genus-species tree is in its own place: nodes and branches don't overlap and each is clearly marked off from the others.

---

<sup>74</sup> Translated after Jonathan Barnes (Porphyry 7), with modifications.

As will be discussed in Sections 3.2.2 and 3.2.3 below, hierarchical ordering with clearly demarcated elements of a logical structure does occur in illustrations of the method of collection and division. This can be likened to a branch that divides into two or more smaller branches. To the extent that these relations occur, the genus-species tree is an adequate model for describing a framework produced by collection and division. However, I will argue below that it is overly restrictive; i.e., it does not allow for other kinds of structures defined by collection and division.

### 3.2.2 Fabric

The image of a framework as a woven fabric is promulgated by Julius Moravcsik and Laura W. Grams. In her article, “The Eleatic Visitor’s Method of Division,” Grams argues against the model of the genus-species tree: “Rather than producing a branching, hierarchical tree of kinds, the procedure of *diairesis* is analogous to unravelling individual threads from a messy knot and then weaving the related strands back together” (131). She notes that the weaving metaphor is drawn from the paradigm of weaving illustrated in the *Statesman* (Grams 131). Grams states that the analogy of weaving in this dialogue is used to show how statesmanship can be clearly separated from similar fields of conduct (131).

Grams argues that in some cases, division separates overlapping pairs of kinds (130). For example, at 225c in the *Sophist*, the Eleatic Stranger separates the art of contradiction (ἀντιλογικός) into skilled and unskilled forms of arguing, the latter being a form practiced by the non-expert. However, the art of contradiction is one of the sub-

divisions of expertise (τέχνη), the starting point of the divisions. Under the genus-species model, unskilled arguing, since it belongs to the non-expert, should be excluded from τέχνη and its sub-divisions, including the art of contradiction. Similarly, at 222d wage-earning (μισθαρνητικός) and gift-giving (δωροφορικός) appear in subsequent divisions of conquering, but wage-earning and gift-giving are forms of *exchange* as opposed to conquering (219d; Grams 133). Under the genus-species model, exchange and conquering are mutually exclusive; as forms of exchange, wage-earning and gift-giving would be excluded in the hierarchy of kinds that fall under conquering.

Regarding these seemingly contradictory relations, Grams argues:

This is not a difficulty for the weaving model of division, since it rejects the idea that exchanging and conquering are exclusive opposites. Instead, the intensions of exchanging and conquering are distinguished from one another on the grounds that one is agreeable while the other is accomplished by force, but their extensions overlap insofar as many distinct activities may be accomplished through either mutual agreement or force (134).

Thus, *intensionally*, the concepts of exchanging and conquering are mutually exclusive. More specifically, exchanging is distinguished by the fact that it is agreeable, while conquering is not agreeable but instead takes by force (219d; Grams 133). Thus, the meanings of these two concepts are mutually exclusive: one is an activity based on agreement, the other is not. But in terms of their *extension* – i.e., in terms of the instances of these activities – exchange and conquering are not mutually exclusive. For example, an instance of gift-giving may be a way of hunting and capturing a lover – i.e., not an agreeable exchange but a way of trapping one’s beloved by means of gifts (222e). As Grams points out, a sophist can “conquer” by means of offering gifts to the young men that he hunts, just as a lover can “conquer” by offering gifts to the beloved (134). In this

case, the activity of gift-giving is a form of hunting and therefore conquering. On the other hand, gift-giving may be part of an agreeable transaction; e.g., one may give a gift only with the expectation of gratitude in return, in which case gift-giving is not a form of conquering but exchange (cf. 219d; Grams 133). In short, instances of the same kind of activity (gift-giving) are not restricted to either exchanging or conquering; instead, gift-giving overlaps both kinds of acquisition; i.e., some instances of gift-giving are forms of exchange, some are forms of conquering. Thus, through division a structure based on relations of overlap, as opposed to a hierarchy of mutually-exclusive kinds, is defined. Grams emphasizes that hierarchical relations often *do* occur in a series of divisions, but certainly not in every case, and the hierarchical model fails to account for seemingly contradictory divisions that can be explained through a model that accommodates overlapping parts or kinds (142).

Grams notes that the weaving metaphor was partly inspired by Moravcsik's remark that division produces something like a "quilt pattern" (131). Moravcsik too emphasizes that division is not restricted to hierarchical relations – instead, overlapping parts and kinds are not uncommon in division. This interpretation is based on the fact that divisions of the same whole do not always yield the same parts. For example, Moravcsik states that in the *Sophist*, Art (τέχνη) is divided into the *acquisitive* and the *productive*, while in the *Statesman*, Art is divided into the *theoretical* and *practical* (*Plato and Platonism* 217). He argues that the two differing divisions of the same thing "gives us cross-classification, or even more complicated structures" (Moravcsik, *Plato and Platonism* 216). Sophistry and the arts are "multi-faceted," and there is no single,

definitive division that is the only “natural” way to divide them (Moravcsik, *Plato and Platonism* 216-217).

Like Grams, Moravcsik contrasts division with Aristotelian classification, and argues that the latter model is restricted to non-overlapping species and hierarchies of genera (*Plato and Platonism* 217). In short, “we should not think of the divisions as giving Aristotelian structures ... Rather, we should think of the parts as overlapping, crisscrossing, yielding a conceptual quilt, articulating the complexity of the generic Form and also the different facets of the specific *technē* to be delineated.” (Moravcsik, *Plato and Platonism* 217). Unlike the Platonic model of division, Aristotelian classifications based on genus-species hierarchies yield ontological “tree” structures; thus, dividing animals into mammals and non-mammals, for example, or into birds and insects, does not yield the “cross-classifications” seen in Platonic division, where one kind can be divided in one of several different ways.

Under Moravcsik’s model, since a target to be defined, such as the sophist, is multi-faceted – i.e., since there is no single, definitive representation or formula that integrates only one set of essential properties – multiple definitions of the same thing are permissible in the Platonic scheme. These are not definitions in the usual sense of the word – i.e., instead of *one* “definitive” characterization for each object of inquiry, an object may have multiple definitions each of which sufficiently distinguish it from others. In other words, often there are several unique characterizations of the same thing, any one of which will serve as a definition, though some characterizations may be more revealing than others. To use one of Moravcsik’s examples, any given natural number can be characterized in multiple ways by distinguishing the kinds of number under which it falls

and its relations to other numbers (“Plato’s Method of Division” 166). Thus, the number 2 can be characterized as the lowest even number, the successor of 1, or one half of 4, for example (Moravcsik, “Plato’s Method of Division” 165). In short, the idea of a definition in the traditional sense does not hold in Platonic division:

... just as some true characterizations of number are more revealing than others, so some characterizations of sophistry, i.e. those that include a full analysis of deceit and meaningful falsehood, are more revealing ...The existence of a plurality of divisions is in no way an argument against their being grounded in reality. Only if we insist, anachronistically, that by ‘logos’ Plato must mean ‘definition’ in the modern sense does it seem implausible that several divisions of statesmanship should be reflecting reality. Plato, however, did not operate with the modern dictionary-type definitions (Moravcsik, “Plato’s Method of Division” 166)

Like Grams, Moravcsik observes that biological hierarchies *are* produced by the method of division (*Plato and Platonism* 217), but he is more interested in contrasting Platonic division with Aristotelian classification than in pointing out its similarities. He states that “Classifications come in many sizes and shapes. In biology and some of the other natural sciences, tree-like structures are useful for understanding relations between kinds and sub-kinds.” (Moravcsik, *Plato and Platonism* 219). However, Platonic division covers a much wider ground, where arts, number, and sound are divided, for example (Moravcsik, *Plato and Platonism* 215). To Moravcsik’s list of examples may be added the division of madness into the human and the divine (*Phaedrus* 265a); the division of all activities into two general kinds, combination and separation (*Statesman* 282b); and the division of political constitutions into various aspects such as poverty and wealth and force and consent (*Statesman* 291e-292a; see also Appendix A 47). Why should the definitional scheme of a genus-species hierarchy hold sway in these cases? Here, as in Grams’ model, the cross-classifications and overlapping kinds of the “quilt” model play a useful role.

In conclusion, the advantage of the ‘woven fabric’ and ‘quilt’ models is that they are not tied to a strict genus-species hierarchy. These models respect the fact that collection and division have a wide scope. More specifically, if collection and division underlie everyday reasoning – i.e., if they enable us “to speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b), they would have to have a wide scope: people think outside of the genus-species tree all the time, and this is to be expected because reality is not always so neatly divided. As such collection and division are more inclusive of different kinds of reasoning, and the image of overlapping, criss-crossing threads takes account of structures that do not always have mutually exclusive kinds.

### 3.2.3 Lens

The lens metaphor is described by Kenneth Sayre in *Plato's Analytic Method*. Sayre argues that a combination of Forms, not a hierarchical genus-species structure, yields a definition in the Platonic sense. He explains his interpretation using an example from the *Sophist*, where the definition of the angler comprises Art, Acquirer, Captor, and other Forms corresponding to properties of the angler. A key difference between Sayre’s model and the genus-species tree is that the former is based on symmetric relations between Forms, not a hierarchy of genera and species. Sayre argues that “there is no relationship of decreasing generality built into the ordering of the properties in Plato’s division leading to the Angler.” (*Plato's Analytic Method* 191). Thus, the concept of a *summum genus* – a highest kind – does not apply:



There is no reason why, in the first place, if a genus must be found in Plato's definition of the Angler, that genus might not be either Acquirer or Captor instead of Artisan. It is as appropriate to say of an angler that he is an acquirer or that he is a captor as to say that he is an artisan. An angler, among other artisans, is acquisitive, hence an acquisitive artisan; but an angler is no less an artisan among acquirers, hence an artful acquirer. In the same sense he is no less an artisan who captures than a captor who employs artful means (Sayre, *Plato's Analytic Method* 190).

On the other hand, Sayre's model *does* allow for hierarchical relations of the kind seen in the genus-species tree, and these relations are not uncommon in division. However, where hierarchical relations do occur, they occur incidentally (Sayre, *Plato's Analytic Method* 197); the primary relation that governs division is that of the symmetric combination of Forms. In other words, if Form A combines with Form B, then Form B combines with Form A. This relation is in marked contrast to what Sayre calls the "Aristotelian model," where relations are antisymmetric: if A is a species of B, B is not a species of A (*Plato's Analytic Method* 190).

Sayre argues that class intersection is a "more felicitous model" for understanding the relationship among Forms in a Platonic definition (*Plato's Analytic Method* 202). In general, a Form A will combine only with a subset of other Forms, Form B with another subset, and so on. The result is that Form A will combine with more Forms than the pair of Forms A and B together, and similarly, A and B will combine with more Forms than A, B, and C together (Sayre, *Plato's Analytic Method* 202). In short, each Form that is added to a combination of other Forms narrows down the concept that reflects the combination. Sayre uses the image of a window or lens to explain this process:

According to this model, then, any grouping of Forms might be conceived as providing a "window" through which some but not all other Forms can be "viewed." ... Perhaps the metaphor of a lens would be even more helpful, for then we could think of a given group of Forms as providing a unique focus under which only

some other Forms come into view. The more Forms in general entering into the “lens,” at least up to a certain point, the fewer other Forms stand sharply in view at its focal point ... the function of a dialectical division is to bring together just those Forms and only those Forms which in combination articulate uniquely the nature of the thing or Form to be defined (*Plato's Analytic Method* 203).

Thus, under this model, a definition produced by collection and division is constructed by combining Forms iteratively, with each combination serving as a focal point that brings into view a subset of overlapping Forms. Forms are combined successively over each stage of a division and the focal point is gradually refined. The end result is a combination of Forms that converges onto a definition.

Sayre notes that Cherniss argued convincingly against hierarchical models of division (*Plato's Analytic Method* 192), and there is a great deal of similarity between Cherniss’ interpretation of division and Sayre’s model. For Cherniss, division has nothing to do with genus and species. He states that “Nor does Plato anywhere make the distinction of genus and species among the ideas; but what Aristotle calls genus, differentia, and species are for him all distinct ideal units...” (Cherniss, *Riddle of the Early Academy* 54). The “ideal units” that Cherniss refers to are the highest kinds of the *Sophist*, such as “Identity” and “Difference” (*Riddle of the Early Academy* 54). Unlike genus-species relations these do not produce hierarchical structures; rather, as in Sayre’s model, ideas relate to each other symmetrically, and the appropriate terms for Cherniss are “blending” and “communion” as opposed to containment (*Riddle of the Early Academy* 54). Thus, unlike a genus-species relation, which is antisymmetric, if an idea A blends or communes with another idea, B, then B also blends or communes with A. For this reason Cherniss concludes:

Plato could not, then, have intended by the use of diaeresis to produce an ontological hierarchy of the world of ideas. The *Sophist* and *Politicus*, which have come to be considered as handbooks of diaeresis, show that he meant it rather to be a heuristic method, an instrument to facilitate the search for a definite idea, the distinction of that idea from other ideas, and its implications and identification ... He describes it as a useful means of narrowing the field of search (*Riddle of the Early Academy* 54-55).

Cherniss also states that diaeresis is “a process the stages of which are important rather as a safeguard to insure the right direction of the search than as representative of necessary ingredients of the idea,” and he points out that “longer” and “shorter” roads can lead to the same conclusion (*Riddle of the Early Academy* 55).

The strength of Sayre’s model is that it is not encumbered by the Aristotelian model. It is broader than the latter in that it allows for strict hierarchical relations, but these are not required. Symmetric relations, including overlapping relations, are compatible with this model. Moreover, Sayre’s model highlights the fact that the starting point of an inquiry is not necessarily a most general kind – i.e., a *summum genus*. In fact, there may be multiple starting points for a given inquiry, each of which may lead to the same conclusion. Thus, when Sayre argues that one may start either with Art or Acquisition and achieve the same results, he removes the problem of how to identify the *summum genus* as a starting point because no such identification is necessary.

### 3.2.4 Mesh

In *Plato’s Individuals*, M.M. McCabe offers a different model for understanding collection and division, “the mesh of identity.” In this model, a universal is understood as if it were an individual item located within a specific context. For example, consider

speech and music. Collection and division articulate what McCabe calls “individual sound universals” (247) – i.e., not particular instances of sound, but rather discrete, well-defined types of sound, such as the letter ‘a’ or the musical note ‘C.’ Even though ‘a’ and ‘C’ are *types* of sound, each can be treated as an individual in the sense that each type of sound occupies one “place” within a specific context (247). For example, each musical note has its own location relative to other notes in the context of the musical scale. Here is an example of how McCabe understands this model, using an example from the *Philebus*, where the method is applied to music:

Music is structured, essentially, because music is about the relations between one note and another. Furthermore, each note only is the note it is because of its place on the scale, its position within the structure ... Music, like speech, is the context within which individual notes and sounds (middle C, D flat, “s,” “b”) find their determinate place (247).

Thus, McCabe emphasizes the role of placement in collection and division. More specifically, the *location* of an item relative to other items in the same conceptual scheme is one determinant of its identity.

Without the method of collection and division, human speech and musical sound are perceived as being “indefinite” or “indeterminate” (ἄπειρον) (McCabe 246). But because collection and division “bring limit to the unlimited,” individual sound types (e.g., a letter type such as ‘a’ or ‘b,’ or a musical note such as C or D) can be differentiated and placed within a context (McCabe 246-247). The “context” can be understood as a continuum (spoken sound in one case, pitch in another) in which different letters and notes each have their own “fixed place” relative to the others (McCabe 253). This interpretation applies not only to universals such as sound types but

also to physical, concrete objects, each of which can be understood as having its own set of spatio-temporal coordinates (253). McCabe extends her argument to concrete objects as follows:

Being something or other is determined by the context in which the something [*sic*] occurs; that is, its relations to other items and their relation to it. It is, then, on a continuum; and it is (to be an individual) at a fixed place on that continuum. Imagine this in the most abstract terms – the continuum might be space/time; the limit on the continuum will be the coordinates that individuate a particular object. And the combination of the two (spatio-temporal coordinates) will allow us to identify and to count each individual particular thus determined. (253).

McCabe is not making the anachronistic claim that Plato had applied the concept of spatio-temporal coordinates in his illustrations of the method. Rather, there are analogous concepts found in Plato's illustrations of the method of collection and division; e.g., just as pitch can be seen as a continuum in which notes are placed, as described in the *Philebus*, so too can space and time be seen as a continuum in which physical objects have determinate locations.

In my view, the Mesh model is flawed because it fails to account for the overlap relation. For example, not all letters of the alphabet are discrete, non-overlapping items, where each is in its own determinate "place" within a context. In other words, while one can argue that musical notes are arranged in such a fashion, this is not the case with letters. Thus, while the notes C and D, for example, each have their own (i.e., non-overlapping) locations on the musical scale, this is not the case with the letters 'α' and 'ο,' to use a parallel example. Rather, 'α' and 'ο' overlap in the sense that phonetically they are similar. More specifically, while they have differences in pronunciation they also have similarities, and within the vowels they do not have their own positions on a well-

ordered ‘scale,’ as musical notes do. In a similar vein, how would McCabe’s argument apply to universals such as Art and Acquisition? Sayre argues convincingly that these concepts overlap – i.e., they do not occupy a “fixed place” in a context as if they were notes in a musical scale or physical individuals with spatio-temporal coordinates; rather, they overlap with each other and with other concepts in a non-hierarchical structure.

### 3.2.5 Conclusion

The four models discussed above<sup>75</sup> exhibit two tendencies in understanding collection and division:

1. One tendency reflects the need for a clear picture of the method of collection and division in line with traditional (i.e., Aristotelian) terminology. This picture clarifies both how the method works and the rules by which it operates. In this case, the genus-species tree is a suitable model. If the method produces a logical “tree” – i.e., a hierarchy of containment relations without overlapping species, with everything in its proper place – the logical structures produced by the method can be understood as providing clarity and definition to the elements it subsumes.

---

<sup>75</sup> Stepping back to look at the bigger picture, it is worth noting that the construction of post-Platonic models for representing the logical structures of collection and division also reflects the three operations. The four models indicate that interpretations of collection and division can be divided into kinds, the names ‘Tree,’ ‘Fabric,’ ‘Lens,’ and ‘Mesh’ demarcate each kind and indicate their contents, and each kind can be ‘placed’ into broader kinds (e.g., those that restrict collection and division to hierarchical structures, and those that do not).

2. The opposite tendency reflects the desire to break free of what appears to be a model for rigid taxonomical systems, a model that seems more fitting in the sciences of biology and zoology as opposed to logic and philosophy. In this case, models which allow for overlapping parts and multiple characterizations of the same kind or object are useful.

The second tendency articulates models which are broader in scope because they allow for the possibility of genus-species structures *within* a framework. However, the possibility of overlapping relations comes only at the price of clarity. How can there be definition if there is overlap, given that definition in the traditional sense of the word is a kind of demarcation? In terms of concrete particulars, how can an organism be counted as *one* individual if two or more organisms can occupy the same space? In short, the symmetric and overlapping relations permitted by the Fabric and Lens models call into question the supposed clarity that the method of collection and division produces.

However, there may be reasons other than an apparent lack of clarity for favoring the hierarchical tree model. Peter Simons observes that in general, in human thought there is a tendency to avoid relations of “proper overlap” in which individuals overlap, but neither is a proper part of the other:

There appears to be a certain conceptual uneasiness about proper overlapping. This might be connected with its abnormality for human beings (as a permanent state – the mother-foetus case is quite normal), but may be more general. We readily accept stateless tracts of sea between nations, but the idea of two nations’ having overlapping territories is most uncomfortable for more than one reason. There appears to be a general tendency to draw conceptual boundaries, cast concepts of physical things and events in such a way that for most practical purposes proper overlapping is avoided (*Parts: A Study in Ontology* 12).

Thus, it may be the case that hierarchical structures are favoured for psychological or perhaps “anthropological” reasons (Simons, *Parts: A Study in Ontology* 12) as opposed to purely conceptual or logical ones. Furthermore, the relation of proper overlap, unlike that of proper parts, is not transitive. More specifically, while a transitive relation between proper parts is the basis of Barbara (e.g., if A is a proper part of B, and B is a proper part of C, then A is a proper part of C), overlapping parts fail in this regard. This will be explained in more detail in Section 4.4.3 (pg. 211).

While clarity is one of the advantages of the hierarchical model, in my view it is overly simplistic. Grams, Moravcsik, and Sayre are correct to point out that the illustrations of collection and division clearly indicate that in some cases, collection and division articulate non-hierarchical relations. As explained in Section 3.2.2 above, the division of Number into Odd and Even is just one example that shows that genus-species relations – i.e., a “tree” or hierarchy – are not the sole province of collection and division. In general, it is odd to try to restrict collection and division – that which allows us “to speak and to think” (“λέγειν τε καὶ φρονεῖν”; *Phaedrus* 266b) – to a form of reasoning in which hierarchical relations are a requirement. As discussed in Section 1.6.3, collection and division have a very wide scope, even when they are applied as a skill-based procedure; the method is useful in *all* the arts (*Philebus* 16b).

Thus, the genus-species tree is one of several possible results of collection and division. It is very useful in understanding a subset of the divisions that are illustrated in the dialogues. But it can also be misleading: in general, the concepts *summum genus* and *infima species* – i.e., the notions of “highest” and “lowest” points on a logical structure – are artefacts or side-effects of images represented by the idea of a genus-species



hierarchy. It makes sense to say that a physical tree has “highest” and “lowest” points, but why should this be the case for structures defined by collection and division which may or may not include genus-species relations? Understanding a framework produced by the method in terms of only *one* kind of relation can generate false questions. For example, in his article “Platonic Diairesis,” James Philip’s description of the method of division as seen in the *Sophist* is replete with spatial metaphors that reflect the Tree model:

To sum up, the first step in the procedure [of division] is to move upwards from the definiendum to its summum genus. Though it is suggested that this occurs by a sort of *synopsis* – by an over-all survey of similars and dissimilars – no formal procedure is prescribed, and it would appear that we are to *see* or intuit. The sophist practises a skilled activity, and all activities involving peculiar skills are to be subsumed under the genus *technê*. It may be that Plato considered this a practical and adequate solution. In any case we are not told how he would proceed if *technê* had to be defined and so subsumed under a yet higher genus. Nor indeed are we told whether we would eventually arrive at an ultimate summum genus or summa genera, nor whether there are (highest) genera that are not definable (349).

This interpretation of Platonic division is not very different from that of another recent commentator on division, Constance Meinwald:

For us today it may be easiest to catch onto the idea [of Platonic division] by thinking of the program of Linnaeus. We can think of such a scheme as starting with a genus and producing its species by adding differentiae, then adding differentiae to each species, and so on until lowest kinds are reached. An account, or real definition, of each of the lower kinds is then available via genus and differentia(e)...The totality of such genus-species structures would map out the underlying structure of reality (“The Philebus” 492).

In the first passage, Philip questions how the “highest” genera are to be determined. In the second passage, Meinwald states that a series of divisions ends with

the “lowest kinds.”<sup>76</sup> The question of how to find the *summum genus* or the “highest” point (and similarly the question of where the “lowest” species is to be found) *does* make sense in the Porphyrian tree model, but if a framework is understood as a “woven fabric” with overlapping threads, or a “lens” that brings into view a community of overlapping Forms, questions that concern “highest” and “lowest” points are misleading. This is not to say that such questions are always misleading – there clearly are instances where a framework defines a hierarchy not unlike a genus-species tree. But the method of collection and division often works differently. Moreover, in ancient times the image of a hierarchical “tree” was not the only way to understand genus-species relations. At 1.18 – 2.13 in the *Introduction* Porphyry points out that the term “genus” (γένος) had three primary meanings:

1. A family related to one ancestor
2. The origin of someone’s birth – either a person or place

---

<sup>76</sup> It is important to note that not all commentators share Meinwald’s interpretation. For example, Tuominen states that in both Plato and Aristotle, a search for a definition begins not with reasoning from the “top” to the “bottom” of a tree, but rather one begins with the subject under consideration (e.g., the number three) and then considers the genus to which it belongs (e.g., number) (Tuominen, “Apprehension and Argument” 65-66). To illustrate this, consider one of Aristotle’s examples from the *Posterior Analytics*, where reasoning about magnanimity (μεγαλοψυχία) is discussed (2.13 97b16–27). Tuominen argues that Aristotle’s approach in this case resembles the method of collection and division:

The example bears a strong resemblance to Plato’s analysis of love by collection and division in the *Phaedrus* ... Both in the *Phaedrus* and in Aristotle’s example some phenomena are first located under a more general type. In the *Phaedrus* love is taken to be a kind of madness, in Aristotle’s example Alcibiades, Achilleus and Ajax as well as Lysander and Socrates are recognised as magnanimous men (“Apprehension and Argument” 66).

Thus, there is a movement from the phenomena under consideration to a more general type; i.e., from love to madness in the first case, and from individuals such as Alcibiades and Achilleus to magnanimity in the second. There is then a “downward” movement and the procedure ultimately yields a definition of the subject under consideration. A similar analysis of the procedure is described by James Lennox: one begins with the phenomenon being investigated, then considers the properties that belong to the kind under which the phenomenon is subsumed, and then with a “downward movement” the reasoner ultimately formulates a conclusion about the subject under consideration (98-99).

### 3. That under which a species is ordered (3-4)

At 2.14 Porphyry states that the third meaning is of interest to philosophers (4), but the other meanings are also pertinent. For example, the second definition tells us that a genus can be a geographic point of origin. The image of a geographic origin frees us from the scheme in which the “highest” and “lowest” serve as endpoints of a logical structure (as with, for example, the *summum genus* and the *infima species*), or where “containment” is the primary relation. Rather, just as Athens, for example, connects to other locations through a network of roads, a framework can be seen as a set of non-hierarchical relations between different points on a logical structure. Under this model, a node in a network of kinds would branch out in many directions, just as Athens branches out to many other nodes (cities). Thus, starting at Athens, one can trace out paths such as Athens – Corinth – Sparta, Athens – Corinth – Arcadia, Athens – Boetia – Epirus, etc. Similarly, returning to Griswold’s map of madness in figure 1, one does not have to start at the “top” with madness and work one’s way down, instead, one can trace out other routes such as Erotic – Prophetic – Divine or Erotic – Divine – Madness. Under these models, various combinations of overlapping Forms may be articulated, just as a geographic route can comprise various combinations of roads and places.

Porphyry’s first definition in the list above, *a family related to one ancestor*, is also of interest. It will be explained in Section 5.4.2 (pg. 258) that γένος and εἶδος can refer to an individual as well as a species in both Plato and Aristotle. It will be argued that reasoning about a γένος or εἶδος does not always involve reasoning about universals

– i.e., collection and division are amenable to reasoning about individuals and lineages in addition to universals and genus-species trees.

In conclusion, in my view both the Fabric and Lens models most accurately depict the structures produced by collection and division. The advantage of the latter is that Sayre clearly shows how a search can, step-by-step, arrive at its object: overlapping Forms provide the means by which a search is narrowed down to its target. Sayre also clearly explains how symmetric relations are defined through collection and division. On the other hand, the models presented by Grams and Moravcsik clearly show how there may be multiple characterizations of the same object. Moravcsik's example of how a natural number can be defined in multiple ways states this point clearly. This supports the claims made by commentators such as Griswold who argue that there is more than one way to divide the same thing (see Section 1.2.1, pg. 21). However, regardless of the particular merits of the Fabric and Lens models, I believe that the most important consideration in the evaluation of these models is the following: does a model allow for the possibility that non-hierarchical relations can be defined through collection and division? In other words, if a model is compatible with both genus-species trees as well as other structures, then this is the deciding factor. To state the case negatively, models that restrict collection and division to hierarchical structures require an interpretation of the dialogues that is too narrow, as Grams, Moravcsik, and Sayre have convincingly argued. McCabe's interpretation is strong in this regard, but as I have argued above, it is undermined by the fact that it does not account for the overlap relation. In short, interpretations that consistently account for the diversity of structures seen in the

dialogues are the strongest. For this reason I believe that both the Fabric and Lens models most accurately represent collection and division.

### 3.3 Two Perspectives on a Framework

For frameworks that define persons or representative individuals (e.g. the sophist, the statesman), two points of view may be compared. One is that of a philosopher or logician carrying out the method of collection and division, the other is that of the person being defined, i.e. the “target” of a definition, such as a sophist. Thus, there are two perspectives to consider: on the one hand, there is the viewpoint of one who applies collection and division, on the other, there is the viewpoint of the individual being defined – i.e., the person or kind of person to which collection and division are applied.<sup>77</sup> More specifically, both the sophist and the statesman are defined and pictured by the Eleatic Stranger – we can think of this as the difference between a portrait artist on the one hand, and the subject of the portrait on the other; i.e., one can be a target as well as a practitioner of collection and division. In the former case, how can a person reason his or her way out of a “portrait” or “definition” produced by another through collection and division? For example, how might a sophist respond to any of the seven definitions produced by the Eleatic Stranger using collection and division (see Appendix B 2-9)? It will be argued below that the target can overturn an established definition by locating

---

<sup>77</sup> A distinction that parallels the two perspectives is made in the *Phaedrus*, where Socrates states “δεῖ οὖν πρῶτον ψυχῆς φύσεως περὶ θείας τε καὶ ἀνθρωπίνης ἰδόντα πάθη τε καὶ ἔργα ἀληθῆς νοῆσαι” (“First, we must understand the truth about the nature of the soul, divine or human, by examining what it does and what is done to it.” ; 245c). This remark raises two questions in regards to collection and division: how can one act – i.e., reason – through collection and division, and conversely how is one acted upon by others who use collection and division? The discussion above will focus on the second question.

errors in the construction of the framework – i.e., structural defects in a framework can be recognized, allowing the one defined to overturn the definition or classification. Below, two examples that illustrate the concept of being the target of a framework will be discussed, the sophist and a foreigner who is defined as a slave.

At 235b in the *Sophist*, reasoning (‘λόγος’) is depicted as an instrument for encircling something that is difficult to capture – i.e., for placing limits around that which appears to be tenuous, vague, shadowy, or indefinable. More specifically, reasoning is employed in order to *contain* the sophist. In this passage, the Eleatic Stranger says “Ἄγε δὴ, νῦν ἡμέτερον ἔργον ἤδη τὸν θῆρα μηκέτ’ ἀνεῖναι · σχεδὸν γὰρ αὐτὸν περιειλήφαμεν ἐν ἀμφιβληστροῦ τινι τῶν ἐν τοῖς λόγοις περὶ τὰ τοιαῦτα ὀργάνων, ὥστε οὐκέτ’ ἐκφεύξεται τόδε γε.” (“Well, now it’s our job not to let the beast escape. We’ve almost hemmed him in with one of those net-like devices that reasoning provides for things like this.”<sup>78</sup>). Here, a “net-like device” is implemented through the method, and it is used to contain something that seems uncontrollable. Indeed, because the sophist is accused of having an infinite (“ἄπεράντων”) supply of tricks – i.e., countless arguments and counter-arguments – in which to elude and refute his opponents (241c), it is deemed necessary to find some way of encircling – i.e. placing limits around – him. Thus, by defining the sophist through the method he is contained, marked off and separated from others. At the end of the dialogue, the Eleatic Stranger “binds” or “ties together” (συνδήσομεν) the sophist’s name into the final definition (268c).

There are at least two ways in which a target can respond to a definition. One is to reason deductively, to try to prove a definition wrong. Stepping away from the example of the sophist for a moment, consider Aristotle’s claim in the *Politics* that barbarians are

---

<sup>78</sup> Translated after Nicholas P. White (Plato 255), with modifications

natural slaves (1.1252b). Assume that a barbarian such as a Lydian needs to face a deductive “argument” based on a syllogism of the traditional form such as the following:

All Lydians are barbarians

All barbarians are natural slaves

---

All Lydians are natural slaves

In this case, a Lydian has the option of arguing deductively in turn. However, it will be argued in Chapter 4 that the syllogism rests on a framework produced by collection and division, and rather than arguing deductively to break free of the classification, the Lydian (or whomever is being targeted) can formulate a counter-argument by identifying errors in any of the three operations used to construct the framework.

Errors in seeing are described at 284e – 285a in the *Statesman*. Here, “many of the sophisticated people” (“πολλοὶ τῶν κομψῶν”) who believe they are clever are in fact liable to make errors by failing to correctly see similarities and differences. More specifically, according to the Eleatic Stranger, they fail to observe the following principles:

1. ... ὅταν (b) μὲν τὴν τῶν πολλῶν τις πρότερον αἴσθηται κοινωνίαν, μὴ προαφίστασθαι πρὶν ἂν ἐν αὐτῇ τὰς διαφορὰς ἴδῃ πάσας ὅποσαι περ ἐν εἶδεσι κεῖνται, τὰς δὲ αὖ παντοδαπὰς ἀνομοιότητας... (285b1-4)

...the rule is that when one perceives first the community between the members of a group of many things, one should not desist until one sees in it all those differences that are located in classes<sup>79</sup>...

---

<sup>79</sup> Both passages translated by C.J. Rowe (Plato 328).

2. ... ὅταν ἐν πλήθεσιν ὀφθῶσιν, μὴ δυνατὸν εἶναι δυσωπού-  
μενον παύεσθαι πρὶν ἂν σύμπαντα τὰ οἰκεῖα ἐντὸς μιᾶς (5)  
ὁμοιότητος ἔρξας γένους τινὸς οὐσία περιβάληται. (285b4-6)

...when [unlikenesses] are seen in multitudes,  
one should be incapable of pulling a face and stopping before  
one has penned all the related things within one likeness and actually  
surrounded them in some real class.

In the first case, an error is made if one fails to discern the real parts of a whole.

Instead, the relevant differences are ignored and only the similarities are seen. In the second case, hidden similarities are not discerned – rather, only differences are seen, and the many instead of the whole are seen. These errors indicate how a “natural slave” can respond to the deduction above: it is not a matter of responding to the argument per se, but the divisions that define the parts of the argument – i.e., the terms of the premises. In this case, irrelevant similarities and differences serve as the basis for the concept of a natural slave. The non-Greeks have the property of not being Greek in common, yet the premises in the syllogism above assume a difference of nature; in short, the deduction rests on rotten foundations. The same form of reasoning is illustrated by the Stranger in the *Statesman*, where an intelligent crane arrogantly divides creatures into beasts and cranes:

ΞΕ. Τὸ δέ γε, ὃ πάντων ἀνδρειότητα, τάχ' ἂν, εἴ που  
φρόνιμόν ἐστί τι ζῷον ἕτερον, οἷον δοκεῖ τὸ τῶν γεράνων,  
ἢ τι τοιοῦτον ἄλλο, ὃ κατὰ ταῦτ' ἴσως διονομάζει καθάπερ (5)  
καὶ σύ, γεράνους μὲν ἐν γένος ἀντιτιθὲν τοῖς ἄλλοις ζῴοις  
καὶ σεμνῦνον αὐτὸ ἑαυτό, τὰ δὲ ἄλλα μετὰ τῶν ἀνθρώπων  
συλλαβὸν εἰς ταῦτ' οὐδὲν ἄλλο πλὴν ἴσως θηρία προσείποι. (263d3-8)

Stranger: But indeed, my courageous friend, perhaps, if there  
is any other animal capable of thought, such as the crane appears



to be, or any other like creature, and it perchance gives names, just as you do, it might in its pride of self oppose cranes to all other animals, and group the rest, men included, under one head, calling them by one name, which might very well be that of beasts. So let us try to be on our guard against all that sort of thing.<sup>80</sup>

Here, the crane has discerned the parts of a whole incorrectly, and uses names to establish a division between cranes and all other animals, human and otherwise. Hypothetically, once the division is established a taxonomy can be developed by defining real or imaginary species of crane and placing them under one side of the division, while developing a tree of species that encompasses all other creatures and placing it under the other side of the division, the side corresponding to the “non-cranes.” It would not be difficult for philosophers to develop taxonomies of slaves and non-slaves in the same fashion. The point is that the Lydian or whomever is targeted as a slave should question the underlying framework – the terms and their interrelations – as opposed to the premise-conclusion structure of the philosopher’s argument. The same goes for those who are accused of going against the philosophers, the so-called “sophists.”

### 3.4 Conclusion

Four models from the secondary literature that describe the results of collection and division were discussed. These have been dubbed ‘Tree,’ ‘Fabric,’ ‘Lens,’ and ‘Mesh.’ Under the first model, frameworks are understood as genus-species trees; in other words, collection and division produce hierarchical structures, and these structures exclude symmetric relations between the parts of a whole. This is not the case in the

---

<sup>80</sup> Translated after H.N. Fowler (Henderson, *Philebus* 27), with modifications

second and third models, where a framework may be defined through overlapping parts. In the final model, the individual in a determinate context is primary. In this case as well, the overlap relation is not captured.

In my view, the second and third models, 'Fabric' and 'Lens,' most accurately describe the structures produced by collection and division. These models capture relations and structures that are not hierarchical, and for this reason they are consistent with many of the divisions seen in the dialogues (see Section 3.2.2). In addition, these models are broad enough to include the hierarchical structures which are sometimes defined in the illustrations of collection and division. In short, the Fabric and Lens models are broad enough to encompass both hierarchical and non-hierarchical structures.

The perspective of being the target of a framework is a special case, and it raises some interesting problems. Rather than presenting a deductive counter-argument to respond to a framework based on faulty divisions, a target defined by collection and division would do well to identify errors in the framework that may be rooted in *seeing*, *naming*, or *placing*.



## Chapter 4

### Collection and Division and Deductive Reasoning

#### 4.1 Introduction

As stated in Section 1.1, the purpose of this study is to defend the thesis that collection and division define logical frameworks that underlie deductive and non-deductive reasoning. Chapter 2 discussed how three operations are employed to produce a framework, while Chapter 3 presented the argument that collection and division produce both hierarchical and non-hierarchical structures. As will be argued below, these structures not only underlie the definitions that are articulated in dialogues such as the *Sophist* and the *Statesman*, they also serve as the basis for deductive systems such as the syllogistic.

This chapter will consider two opposing hypotheses: (1) collection and division are not the basis of deductive reasoning, and (2) collection and division are the basis of deductive reasoning. Section 4.2 will introduce the argument for the latter hypothesis, which will be developed in detail in Section 4.4. However, before the central argument is presented, Section 4.3 will discuss two counter-arguments in favor of the first hypothesis. Section 4.4 will develop the argument that collection and division define whole-part relations that underlie syllogistic reasoning on the one hand, and the formulation of definitions in dialogues such as the *Sophist* and the *Statesman* on the other.

## 4.2 Deductive reasoning and collection and division

In this study, ‘deductive reasoning’ is meant to be taken as a broad term that comprises the formulation and study of valid arguments – thus, it encompasses formal and mathematical logic, including the logic of Aristotle and the Stoics. However, it is beyond the scope of this work to discuss the numerous deductive systems that have been developed since Plato’s time; rather, this chapter will discuss Aristotle’s deductive system, the syllogistic, which is representative of a deductive system that was formulated soon after Plato and dominant in the following centuries up until modern times. The syllogistic was chosen as a representative deductive system because commentators such as Cherniss have argued that division was seen as the only rival system of logic when the syllogistic was developed (see Section 1.5.3, pg. 74), and, as will be discussed below, Aristotle explicitly compares division to the syllogistic. Moreover, a valid syllogism with true premises will yield a conclusion that is necessarily true, and this will serve as a point of contrast between the syllogistic and collection and division in the discussion below.

In the *Prior Analytics* Aristotle compares the method of division to the syllogism, calling the former a “weak” or “degenerate” syllogism (*Prior Analytics* 1.31 46a33; see Section 4.3.2), and his claim raises the question as to the relation between collection and division and the deductive systems promulgated by Aristotle and other logicians from antiquity. It will be shown in Section 4.4 that a framework produced by collection and division can serve as the basis of a syllogism by establishing the relations between its terms. It does so by showing how named parts are placed relative to each other – i.e., how

parts of a logical whole interrelate. Without a framework, the logical relations from which a syllogism derives its deductive power would remain undefined. In other words, it is through collection and division that names and concepts are woven into a structure that serves as the logical basis of deductive reasoning. A set of axioms from non-extensional mereology will be used to derive this conclusion. In addition, Section 4.4 will show how non-extensional mereology can be used to formalize and clarify the structures defined by collection and division in dialogues such as the *Sophist* and the *Statesman*.

### **4.3 Hypothesis: collection and division are not the basis of deductive reasoning**

Some commentators argue that there is no connection between the method of collection and division and the syllogism. David Ambuel argues that “It would say too much to assign division a place within the Aristotelian deductive logical apparatus” (13). He states that “Though some have sought or seen a precursor of the syllogism in it, it is clear that Aristotle ... did not himself view it as such. Nor is there reason to suspect a connection. The syllogism will yield true conclusions from true premises. It follows formally upon the connection provided by the middle term” (Ambuel 13-14). Ambuel also states that “There is no formal derivation, and no refinement or modification of the method could change it into syllogistic inference” (14). However, in Section 4.4 it will be shown that a framework defined by collection and division – i.e., a conceptual whole divided into parts – serves as the basis of syllogistic reasoning.

The purpose of this section is to discuss two other reasons for arguing that the

sylogistic and collection and division are unrelated. First, it can be argued that the use of variables distinguishes the syllogistic from other forms of reasoning. In response to this argument, I will argue that this is not a sufficient reason to conclude that syllogistic reasoning is independent of collection and division. Second, it can be argued that the fact that a valid syllogism will yield a conclusion that is necessarily true is another distinguishing mark of the syllogism. However, in response I will argue that the logical structure that underlies and defines the relations between the premises and the conclusion of a syllogistic inference is defined through collection and division.

#### **4.3.1 The syllogistic is distinguished by the use of variables**

Arguably, Aristotle was the first in Western history to use variables in a system of logic and his use of variables to explain the syllogism has been lauded by commentators and historians of logic (Kneale and Kneale 61). William and Martha Kneale claim that in both Plato and Aristotle, “generality is indicated by a rather clumsy use of pronouns or by examples in which it is left to the reader to see the irrelevance of the special material,” and that in both cases the use of variables would have given “greater clarity and conciseness” (61). In addition, they claim that for expressing more complicated rules, such as those of the syllogism, the use of variables “is almost indispensable” (Kneale and Kneale 61). Referring to the use of variables in the syllogistic, Bocheński remarks that “this is an immense discovery: the use of letters instead of constant words gave birth to formal logic” (69).

A response to this argument is that historically, the use of variables is not a strict

requirement in systems of mathematics and logic.<sup>81</sup> In addition, interpreting letters that appear in Aristotle's *Analytics* as variables results in nonsensical statements. More specifically, if Aristotle intended letters in expressions such as “the A” (“τὸ A”) and “the B” (“τὸ β”) to function as variables (i.e., symbols which may be replaced by any Greek term), then absurdities result. This is argued by Barnes in *Truth, etc.: Six Lectures on Ancient Logic* with several examples from the *Analytics*. For example, consider “εἰ οὐκ ἔστιν ἄλλο τῶν B τὸ A ὑπάρχει, οὐδὲ τῶν A οὐδενὶ ὑπάρξει τὸ β.” (“If the A holds of none of the Bs, then the B will hold of none of the As.”; *Prior Analytics* 1.25a15-16; Barnes, *Truth* 334). Barnes emphasizes that “no replacement of letters by appropriate expressions produces a sentence”; to illustrate his point he lists the expressions “The stone holds of none of the men” and “The justice holds of none of the vices” (*Truth* 334). He states that “Such monsters may be said to have the syntax of sentences; but they are not sentences—they are nonsense.” (Barnes, *Truth* 334). Thus, letters in the *Analytics* are not used as variables; rather, the letter A in such formulas as ‘the A’ or ‘the item on which the A is’ is used as the name of a concrete and determinate predicate. An expression such as ‘the item on which the A is’ is exactly on par with ‘the item of which ‘aardvark’ is true of...’ (Barnes, *Truth* 335). In short, Barnes argues that letters in the *Analytics* are not variables; rather, “Aristotle's logical letters, in their central and characteristic use, are concrete and determinate predicate expressions” (*Truth* 335). While Barnes' hypothesis concerning predicate expressions is open to debate, his main point still stands: Aristotle's statements

---

<sup>81</sup> Mathematical works are sometimes expressed in a natural language. For example, Abu Ja'far Muhammad ibn Mūsā al-Khwārizmī's algebraic treatise, *al-Kitāb al-mukhtaṣar fī ḥisāb al-jabr wa'l-muqābala* was the foundational work in algebra in the Islamic world (Gowers 736). Timothy Gowers remarks that “No algebraic symbolism is employed: everything, including numerals, is expressed in words” (736). So while variables may be “almost indispensable,” the history of mathematics has shown that it is possible to develop a system of formal reasoning without them.



are nonsensical if the letters are understood as variables. Moreover, it will be argued in the following section that it is not the use of variables but rather the idea of logical consequence, or in Aristotelian terms necessity (ἀνάγκη), that distinguishes the syllogistic as a deductive system.

### 4.3.2 The syllogistic is distinguished by logical consequence

Logical consequence – expressed by Aristotle using the concept of necessity (ἀνάγκη) – is a key feature because it distinguishes the syllogism as a form of deductive reasoning. It is because of its deductive force that the syllogistic can be understood as a method of proof, and Aristotle uses this feature of the syllogistic to distinguish it from division. In the first book of the *Prior Analytics*, Aristotle argues that division is a “weak syllogism” because “what it ought to prove, it begs.”<sup>82</sup> (“ἔστι γὰρ ἡ διαίρεσις οἷον ἀσθενῆς συλλογισμός· ὁ μὲν γὰρ δεῖ δεῖξαι αἰτεῖται”; 1.31.46a33). To use Aristotle’s example, if one aims to define *man* and divides *animal* into two kinds, *mortal* and *immortal*, then the practitioner of division merely assumes that man is mortal and selects this as the appropriate kind. The key point is that while the assumption may be correct, it is only an assumption – nothing is proven and so the question is begged. A valid syllogism structured with the correct middle and extreme terms, on the other hand, can prove that man is a mortal animal provided the premises are true.

One response to this argument is that the method of collection and division can provide a proof if all but one of the disjuncts that are derived from a division result in impossibility. Thus, if all animals are either mortal or immortal and man is an animal,

---

<sup>82</sup> Translated by A. J. Jenkinson (cited under Aristotle, *The complete works of Aristotle* in Works Cited)

then if positing man as immortal leads to an absurdity, man necessarily is mortal. Plato uses this method of reasoning. For example, in the middle part of the *Sophist*, a set of three disjuncts is specified: “either everything is willing to blend, or nothing is, or some things are and some are not.”<sup>83</sup> (“Καὶ μὴν ἔν γέ τι τούτων ἀναγκαῖον, ἢ πάντα ἢ μηδὲν ἢ τὰ μὲν ἐθέλειν, τὰ δὲ μὴ συμμείγνυσθαι.”; 252e). However, the first two options are deemed impossible (“Καὶ μὴν τὰ γε δύο ἀδύνατον ηὑρέθη”; 252e), so “everyone who wants to give the right answer will choose the third.”<sup>84</sup> (“Πᾶς ἄρα ὁ βουλόμενος ὀρθῶς ἀποκρίνεσθαι τὸ λοιπὸν τῶν τριῶν θήσει.”). Here, a number is used to define and limit a set of disjuncts (i.e., there are exactly three possibilities); two of the disjuncts lead to impossibilities, so the conclusion is that the remaining disjunct must be correct.

However, it is not clear that this way of reasoning is often seen in collection and division, nor is it evident that disjunction elimination in itself is an essential aspect of the method. On the other hand, arguably, at least some illustrations of the method can be understood in these terms. Thus, in the example of the angler, one posits in the first step that the angler practices τέχνη (*Sophist* 219a). In the next step, τέχνη is divided into two exclusive disjuncts, *production* and *acquisition* (219a-b). Once the former is ruled out, the angler is shown to be in the remaining disjunct, *acquisition* (219d), and the process continues. Under this reading, each division and selection of a mutually exclusive disjunct is a step in the inference. The conclusion of the inference is the collection of disjuncts that have not been eliminated.

However, this interpretation is problematic. As discussed in Section 3.2.5 (pg. 173), under some readings, the method allows for overlapping parts of a whole. In other

---

<sup>83</sup> Translated by Nicholas P. White (Plato 275)

<sup>84</sup> Ibid.

words, not all divisions yield mutually exclusive parts. In addition, even in cases where a whole is divided into non-overlapping parts, what is the procedure for reducing the number of possible parts into which the target can fall to only one? The process by which disjuncts are eliminated is unspecified, and this indicates that disjunction elimination is not a central part of the method of collection and division.

Another reply to Aristotle's criticism is to argue against the assumption that division in the dialogues is expected to prove anything at all. Plato did not consider the method of collection and division to be a method of proof. As discussed in Section 1.6.2, the method serves as a means of investigating, learning, and teaching, and the *Phaedrus* makes it clear that the results of the method may or may not be correct (see Section 2.2.4, pg. 129). In his article on Platonic division, James Philip remarks on Aristotle's criticism as follows: "As there is no indication in the dialogues that Plato thought he was *proving* anything by diairesis this criticism only shows that Aristotle thought the method susceptible of improvement as a consequence of his discovery of the syllogism" (352). Philip also states that "It is ... obvious that [Plato] does not conceive of method as does Aristotle. He does not suggest division as a fool-proof, open-and-shut method of solving problems by following rules ... It is not meant to grind out ultimate truths, which are not for Plato in the ordinary sense communicable" (350-351). Philip is correct; in short, collection and division do not *prove*, they produce defeasible results that are open to further revision. The fact that the definitions produced by collection and division are revised in both the *Statesman* and the *Sophist* (see Appendix B 2-11) after flaws are discovered clearly shows that Plato was *not* formulating a method of proof. On the contrary, the amount of revisions and the emphasis on recognizing errors in the results of

collection and division highlight the fact that Plato was well aware that collection and division often lead to results that are incorrect.

My reply to Aristotle's criticism is as follows: division is not a kind of syllogism, rather, a syllogism rests on a framework that is produced by collection and division. This argument will be developed in Section 4.4.3.3 (pg. 219), where it will be shown that a framework produced by collection and division defines whole-part relations that underlie the four moods of the first figure.

#### **4.4 Hypothesis: collection and division are the basis of deductive reasoning**

The aim of this section is to take the very strong claims of the *Phaedrus* and the *Philebus* seriously to argue that since the syllogism is a kind of reasoning it is an offshoot of collection and division. At *Phaedrus* 266b Socrates states that collection and division give him the ability to speak and to think (Section 1.6.3, pg. 88), and *Philebus* 16b states that "all the discoveries of the arts have been made" through the method of collection and division (see Section 1.6.1, pg. 83). The central claim of the argument below is this: to the extent that a syllogism is a form of reasoning, it rests on a framework defined through collection and division.

##### **4.4.1 Similarities between the syllogism and collection and division**

In the first book of the *Prior Analytics*, Aristotle defines the syllogism as follows:

“συλλογισμὸς δὲ ἐστὶ λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κειμένων ἐξ ἀνάγκης συμβαίνει τῷ ταῦτα εἶναι.” (“A syllogism is a reasoning in which, certain things having been supposed, something different from the things supposed results of necessity because these things are so.”<sup>85</sup>; 1.2 24b18-20). Barnes refers to this passage as “Aristotle’s classic account of Deduction,”<sup>86</sup> and both Barnes and Robin Smith translate the word ‘συλλογισμὸς’ as “deduction” (Smith 2; Barnes, “Proof and the Syllogism” 23).

Necessity (ἀνάγκη) is a key part of this definition and this distinguishes both deduction and the syllogistic from collection and division, but, as will be shown below, there are important similarities between Aristotle’s syllogistic and deductive reasoning on the one hand, and collection and division on the other.

The word ‘τεθέντων’ is the passive form of ‘τίθημι.’ As argued in Section 2.2.3 (pg. 122), this term often expresses one of the three basic operations of collection and division, placing. Commenting on this passage, Robin Smith states the following:

Given the mathematical flavor of much of the *Prior Analytics*, it is probably worth observing in passing that the phrase ‘a discourse in which, certain things having been supposed’ [λόγος ἐν ᾧ τεθέντων τινῶν] can be given a different interpretation: *logos* might mean ‘relationship,’ and the phrase might mean ‘a relationship such that when some things are put in it’ (110).

---

<sup>85</sup> Translated by Robin Smith (Smith 2), with modifications

<sup>86</sup> In “Proof and the Syllogism,” Barnes characterizes three “logical notions” that he names ‘Inference,’ ‘Deduction,’ and ‘Syllogism.’ According to Barnes, the Syllogism is Aristotle’s formal logic and is an Aristotelian innovation, while Deduction is a “semi-technical idealization of our ordinary, pre-theoretical, concept of inference” (“Proof and the Syllogism” 24-5). By Barnes’ own admission, Aristotle contradicts this scheme when he states that (using Barnes’ terminology) all Deductions are Syllogisms at 1.28 44b7-8 (Barnes, “Proof and the Syllogism” 25), and Barnes’ interpretation has been debated in the recent literature. In any case, under Barnes’ reading, all Syllogisms are Deductions, and what is common to both Deductions and Syllogisms is the fact that the conclusion *necessarily* follows from the premises (“Proof and the Syllogism” 22). In the discussion that follows, this is one of the primary differences that distinguishes the argument forms explicated in the *Analytics* from collection and division. In other words, both the syllogistic as a system of formal logic, and deduction in general, are distinguishable from collection and division because they involve logical consequence. In addition, the discussion that follows will focus on the syllogistic as a theory of deductive inference, as opposed to a demonstrative science in which the premises are immediate and primary.

As explained in Section 2.2.3, the function of *placing* in collection and division is to establish relations between the parts of a whole, and this parallels the interpretation that a syllogism is a relationship between terms. But this parallel raises the following question: what method or procedure is used to formulate terms and their interrelations to begin with? More specifically, considering the first part of the definition of the syllogism above, how are premises and the terms of the premises formulated? It will be argued below that the *limits* of the parts of a whole define the terms of a syllogism, while the placement of terms within intervals (διαστήματα) define the premises. The following is an outline of the argument below:

1. When many are brought into a whole, limits form between the parts of the whole (*Parmenides* 158c-d). Collection and division articulate these limits. For example: collection and division establish the ‘terms’ of music by defining intervals (*Philebus* 17c-d). It is because limits (i.e., intervals) are imposed on a continuum that the internal structure of sound is defined.
2. Terms and limits play a parallel role in the syllogistic – i.e., limits between the parts of a whole such as a continuum define the terms of a syllogism. Aristotle describes terms as being placed in the premise of a syllogism as if the latter were an interval.
3. In conclusion, the terms of a syllogism are defined through the limits between the

parts of a whole, and these limits are articulated through collection and division.

This argument serves the purpose of showing that the formulation of a syllogism relies on collection and division. Hence, the argument supports the thesis that collection and division underlie deductive reasoning. The following discussion explains the argument in detail.

If a whole has parts, then there are limits between the parts themselves and between the parts and the whole. This is stated in the following passage from the *Parmenides*, where Parmenides describes to Socrates the process by which parts are formed through the imposition of unity on the unlimited:

Καὶ μὴν ἐπειδὴν γε  
 (d) ἐν ἑκάστων μέρων μέρος γένηται, πέρασ ἤδη ἔχει πρὸς  
 ἄλληλα καὶ πρὸς τὸ ὅλον, καὶ τὸ ὅλον πρὸς τὰ μέρη. —  
 Κομιδῆ μὲν οὖν. — Τοῖς ἄλλοις δὴ τοῦ ἐνὸς συμβαίνει ἐκ μὲν  
 τοῦ ἐνὸς καὶ ἐξ ἑαυτῶν κοινωνησάντων, ὡς ἔοικεν, ἕτερόν τι  
 γίνεσθαι ἐν ἑαυτοῖς, ὃ δὴ πέρασ παρέσχε πρὸς ἄλληλα· ἢ (5)  
 δ' ἑαυτῶν φύσις καθ' ἑαυτὰ ἀπειρίαν (158c7-158d6).

“And whenever each part comes to be one part, the parts then have a limit in relation to each other and in relation to the whole, and the whole has a limit in relation to the parts.” — “Quite so.” — “Accordingly, it follows for things other than the one that from the one and themselves gaining communion with each other, as it seems, something different comes to be in them, which affords a limit for them in relation to each other; but their own nature, by themselves, affords unlimitedness.”<sup>87</sup>

This passage describes the formation of parts and the limits between them when the unlimited (ἄπειρον) coheres into a whole. In Verity Harte’s terms, it describes the formation of a “composition” or “structure” (137). In epistemological terms, conceptual boundaries or demarcations between the parts of a conceptual whole define the structure

---

<sup>87</sup> Translated by Mary Louise Gill and Paul Ryan (Plato 390)

of the whole: to the extent that parts are borderless – i.e., lacking in limit – structure and coherence are missing. In other words, the well-defined parts of a whole – whether the whole is sound (φωνή) or another universal like Man or Art – define the *structure* of the whole; i.e., when the limits between the parts of a concept are defined, the internal structure of the concept comes to light. It is this structure which underlies deductive reasoning.

It will be argued below that some of the underlying concepts of this passage from the *Parmenides* are also evident in Aristotle’s conceptualization of the syllogism. Moreover, there are also similarities between this passage of the *Parmenides* and descriptions of collection and division in Platonic dialogues such as the *Philebus*.

The many becoming one as described in the passage from *Parmenides* above resembles the description of collection in the *Phaedrus* where the “scattered many” are seen and brought together into “one idea” (see Section 2.2.1.2, pg. 105). But the most striking similarity between this passage and collection and division is brought out by the terms ‘ἄπειρον’ and ‘πέρας.’ As discussed in Sections 1.2.4 and 2.5, the concepts of *limit* and the *unlimited* play a crucial role in descriptions of collection and division in the *Philebus*. The method brings the unlimited into a coherent whole, where each part is clearly discerned and seen in its correct place within the whole.

In the *Philebus*, the “limits” between the parts of a whole are sometimes described using another term, ‘ὄρος.’ For example, the harmonic structure that is defined when the method is applied to sound is described using the expression “τοὺς ὄρους τῶν διαστημάτων” (“the limits of the intervals”<sup>88</sup>; 17c-d). The key word here is ‘ὄρος’ – in

---

<sup>88</sup> Translated by H.N. Fowler (Henderson, *Philebus* 223)



addition to serving as a term that expresses the concept of limit in this passage, it is also used by the Eleatic Stranger in the *Statesman*, where it stands for a definitional boundary beyond which the statesman can be found: “Οὐκοῦν μετὰ τοῦτο, ἵνα μή με φθῆς ἐρωτήσας τὴν βραχυτέραν ὁδὸν ἣτις τότε ἦν ἐπὶ τὸν τοῦ βασιλέως ὄρον, αὐτός σοι πρότερον ἔλθω;” (“Then shall I now, without waiting for you to ask me, guide you of my own accord along that shorter way referred to a moment ago that leads to the definition of the king?”<sup>89</sup>; 266d-e).

The term ‘ὄρος’ is also used later in the *Statesman* at 292c to mark off different forms of government that are distinguished through division. Merrill interprets the expression “τὸν ὄρον” in this passage as “the delimiting mark” between kinds of government (48). The idea that a “ὄρος” is a mark of some kind reflects R.M. Dancy’s observations on the role of this term and kindred terms such as ‘ὀρίζειν’; he states that in Plato’s writings, “All these words have to do originally with (spatial) boundaries” and remarks that the concept of a ὄρος as a metaphorical “boundary stone” is still alive in the *Republic* (23-24). Thus, the term reinforces the importance of having a clear conceptual boundary between two parts of a whole. Just as the perimeter of a city can be defined through the placement of boundary stones, a concept can be clearly distinguished and demarcated from a “neighboring” (i.e., similar) concept through the use of a term. An example of this was discussed in Section 1.3.2 (pg. 44), where the name ‘self-directing’ was employed to distinguish one concept from a similar but separate part of the whole.

The term ‘ὄρος’ also plays a key role in the syllogistic because it signifies the “terms” of a syllogism – i.e., the middle terms and extremes. Aristotle’s definition of ‘ὄρος’ is as follows: “Ὀρον δὲ καλῶ εἰς ὃν διαλύεται ἡ πρότασις, οἷον τό τε

---

<sup>89</sup> Translated by H.N. Fowler (Henderson, *Philebus* 41)

κατηγορούμενον καὶ τὸ καθ' οὗ κατηγορεῖται, προστιθεμένου [ἢ διαιρουμένου] τοῦ εἶναι ἢ μὴ εἶναι” (“I call that a *term* into which a premise may be broken up, i.e., both that which is predicated and that of which it is predicated (whether or not ‘is’ or ‘is not’ is added or divides them)”<sup>90</sup>; *Prior Analytics* 1.1 24b16-18). Thus, terms define the basic components of a premise.

Furthermore, Aristotle refers to the premise of a syllogism as an interval (διάστημα), the same word used in the *Philebus* to designate the musical intervals that are articulated through collection and division (17c11). This word is used by Aristotle to express the idea of a statement in which terms are placed (“τεθήσεται”): “ἢ γὰρ ἔξωθεν ἢ εἰς τὸ μέσον τεθήσεται ὁ παρεμπίπτων ὄρος· ἀμφοτέρως δὲ συμβαίνει ἐνὶ ἐλάττω εἶναι τὰ διαστήματα τῶν ὄρων” (“for the term inserted will be placed either outside or in the middle; but in both ways it results that the intervals are one fewer than the terms, and the premises are equal to the intervals”<sup>91</sup>; *Prior Analytics* 42b8-10). The idea of an interval as a statement or proposition in a syllogism also occurs in the *Posterior Analytics* – e.g., at 82b8 Aristotle refers to a pair of terms as a “διάστημα,” and Barnes notes that διάστημα in this passage stands for “proposition” (*Posterior Analytics* 172). Thus, the idea that intervals are divided by terms or limits is expressed both by Plato in his description of the method in the *Philebus*, and by Aristotle in his discussion of the syllogistic in the *Analytics*.

Aristotle too uses the term ‘ὄρος’ in the sense of *limit* – more specifically, he uses the term to refer to a boundary between two species (εἶδος) in the following passage from the *Physics*:

---

<sup>90</sup> Translated by Robin Smith (Smith 2)

<sup>91</sup> Translated after Robin Smith (Smith 40), with modifications

... πότε οὖν (25)  
 ἕτερον τὸ εἶδος, ἐὰν ταὐτὸ ἐν ἄλλῳ, ἢ ἂν ἄλλο ἐν ἄλλῳ;  
 καὶ τίς ὄρος; ἢ τῷ κρινοῦμεν ὅτι ταὐτὸν τὸ λευκὸν καὶ τὸ  
 γλυκὸν ἢ ἄλλο—ὅτι ἐν ἄλλῳ φαίνεται ἕτερον, ἢ ὅτι ὅλως  
 οὐ ταὐτό; (*Physics* 7.4 249a25-29)

When, then, is there a difference of species? If the same thing is in different recipients? or if different things are in different recipients? And how are we to define the limits of a species? What will enable us to decide that particular instances of whiteness or sweetness are the same or different? Is it enough that it appears different in one subject from what it appears in another? Or must there be no sameness at all?<sup>92</sup>

This echoes the use of the word ‘ὄρος’ in the *Philebus*. In the *Physics*, the examples are color and taste, in the *Philebus*, the subject of division is sound; in both cases, the question is the same: how are we to correctly discern the parts of a continuum so that the internal structure of the whole – i.e., the parts of the continuum and their interrelations – can be defined? In the *Physics*, the question is, what “limits” (ὄρος) are there between different species (εἶδος) of whiteness and sweetness, in the *Philebus*, what “limits” are there between different parts of sound that demarcate the musical intervals? Similarly, in the *Statesman*, a conceptual limit distinguishes the statesman from others with which he may be similar.

In addition, in the *Analytics* both the subject-predicate relation and deduction in general are defined in terms of wholes and parts, thus reinforcing the connection between the *Parmenides* passage quoted above and collection and division on the one hand, and the syllogistic on the other. In the first book of the *Prior Analytics*, Aristotle states “τὸ δὲ ἐν ὅλῳ εἶναι ἕτερον ἐτέρῳ καὶ τὸ κατὰ παντὸς κατηγορεῖσθαι θατέρου θάτερον ταὐτόν ἐστιν.” (“For one thing to be in another as a whole is the same as for one thing to be

<sup>92</sup> Translated by R. P. Hardie and R. K. Gaye (Aristotle 416)

predicated of every one of another.”<sup>93</sup>; 1.1 24b26-28). A similar parallel is stated in the *Prior Analytics* at 1.8 30a3: “...τὸ ἐν ὅλῳ εἶναι καὶ τὸ κατὰ παντὸς ὁμοίως ἀποδώσομεν.” (“...we can interpret ‘being in as a whole’ and ‘predicated of all’ in the same way”<sup>94</sup>).<sup>95</sup> Aristotle also states in the *Posterior Analytics* that deduction depends on whole-part relations: “...ἀλλὰ τὸ μὲν ἐξ οὗ συλλογισμὸς ἐστὶν ὃ ἂν οὕτως ἔχη ὥστε ἢ ὅλον πρὸς μέρος ἢ μέρος πρὸς ὅλον ἔχειν...” (“...but what a deduction depends on is something related as whole to part or part to whole”;<sup>96</sup> 1.26 87a22-23).<sup>97</sup>

In summary, to return to the *Parmenides* passage above, when one is imposed on the many and a whole is formed, limits form between the parts. This is analogous to the imposition of limit on the unlimited as described in the *Philebus*, where the method is used to articulate the parts of musical sound (17c-d). In this case, indeterminate sound is

---

<sup>93</sup> Translated by Robin Smith (*Prior Analytics* 2)

<sup>94</sup> Translated by Robin Smith (*Prior Analytics* 13)

<sup>95</sup> For example, in the *Prior Analytics* Aristotle defines the deductive properties of two syllogisms of the first figure, *Barbara* and *Celarent*, as follows:

Ὅταν οὖν ὅροι τρεῖς οὕτως ἔχωσι πρὸς ἀλλήλους ὥστε τὸν ἔσχατον ἐν ὅλῳ εἶναι τῷ μέσῳ καὶ τὸν μέσον ἐν ὅλῳ τῷ πρώτῳ ἢ εἶναι ἢ μὴ εἶναι, ἀνάγκη τῶν ἄκρων εἶναι συλλογισμὸν τέλειον. καλῶ δὲ μέσον μὲν ὃ καὶ αὐτὸ ἐν ἄλλῳ καὶ ἄλλο (35) ἐν τούτῳ ἐστίν, ὃ καὶ τῆι θέσει γίνεται μέσον · ἄκρα δὲ τὸ αὐτὸ τε ἐν ἄλλῳ ὄν καὶ ἐν ᾧ ἄλλο ἐστίν. (1.4 25b32-37)

Whenever, then, three terms are so related to each other that the last is in the middle as a whole and the middle is either in or not in the first as a whole, it is necessary for there to be a complete deduction of the extremes (I call that the *middle* which both is itself in another and has another in it – this is also middle in position – and call both that which is itself in another and that which has another in it *extremes*.)  
(translated by Robin Smith; Smith 4)

Here, terms are understood as if they were “in” (“ἐν”) wholes, and their relations as parts of wholes make deduction possible.

<sup>96</sup> Translated after Jonathan Barnes (*Posterior Analytics* 41), with modifications.

<sup>97</sup> This is reinforced by remarks at *Prior Analytics* 1.25 42a9-12 and *Posterior Analytics* 2.5 92a12-13.

divided and defined by “ὅροι,” notes of the musical scale that demarcate the intervals, thereby giving form and structure to sound. The interrelated concepts of wholes and parts, and the role of terms and limits as described in the *Parmenides* and the *Philebus* are paralleled in two ways in the *Analytics*. First, statements or propositions in a syllogism are understood as “intervals” that are divided into terms (ὅροι). Second, as Verity Harte notes, the unlimited many yield a “structure” with the imposition of limit (137), and the connection between wholes and parts and structure in the *Parmenides* and other dialogues foreshadows the subject-predicate relation as defined in the *Analytics*, where predicates serve as parts of a subject. More generally, as stated above Aristotle claims that deduction depends on whole-part relations. Thus, regardless of whether one considers the statement-term or subject-predicate relation as fundamental to the syllogistic, both relations parallel the whole-part relation as described in the *Parmenides* and the *Philebus*. Furthermore, as will be shown below, a logical framework produced by collection and division serves as the basis of syllogistic reasoning.

#### **4.4.2 Collection and division define structures that underlie deductive reasoning**

The purpose of this section is to present the argument that Aristotle’s method for constructing syllogisms relies on the method of collection and division. After discussing relevant passages from the *Prior Analytics* and comparing them with Plato’s illustrations of collection and division, this section will present M. Tuominen’s observations on Aristotle’s method and argue that the generation of terms employed in syllogisms, and

the formulation of their relations, is made possible through collection and division.

In chapters 27-30 of the first book of the *Prior Analytics*, Aristotle describes a method (ὁδός) for constructing syllogisms. At the beginning of Chapter 27, he states the following:

πῶς δ' εὐπορήσομεν αὐτοὶ πρὸς τὸ τιθέμενον ἀεὶ συλλογισμῶν, καὶ διὰ ποίας ὁδοῦ ληψόμεθα τὰς περὶ ἕκαστον ἀρχάς, νῦν ἤδη λεκτέον· οὐ γὰρ μόνον ἴσως δεῖ τὴν γένεσιν θεωρεῖν τῶν συλλογισμῶν, ἀλλὰ καὶ τὴν δύναμιν ἔχειν τοῦ ποιεῖν (1.27 43a20-24).

Now it is time to explain how we may ourselves always be supplied with deductions about what is placed, and the route by which we may obtain the principles concerning any particular subject. For surely one ought not only study the origin of deductions, but also have the power to produce them.<sup>98</sup>

Here, the importance of having a method for constructing syllogisms is emphasized. Such a method allows us to solve problems by means of formulating deductive arguments. But precisely how is a deduction constructed? In the same chapter of the *Prior Analytics* Aristotle states the following:

(43b) Δεῖ δὴ τὰς προτάσεις περὶ ἕκαστον οὕτως ἐκλαμβάνειν, ὑποθέμενον αὐτὸ πρῶτον καὶ τοὺς ὁρισμούς τε καὶ ὅσα ἴδια τοῦ πράγματός ἐστιν, εἶτα μετὰ τοῦτο ὅσα ἔπεται τῷ πράγματι, καὶ πάλιν οἷς τὸ πρᾶγμα ἀκολουθεῖ, καὶ ὅσα μὴ ἐνδέχεται αὐτῷ ὑπάρχειν. οἷς δ' αὐτὸ μὴ ἐνδέχεται, οὐκ (5) ἐκκληπτέον διὰ τὸ ἀντιστρέφειν τὸ στερητικόν. διαιρετέον δὲ καὶ τῶν ἐπομένων ὅσα τε ἐν τῷ τί ἐστι καὶ ὅσα ἴδια καὶ ὅσα ὡς συμβεβηκότα κατηγορεῖται, καὶ τούτων ποῖα δοξαστικῶς καὶ ποῖα κατ' ἀλήθειαν· ὅσῳ μὲν γὰρ ἂν πλειόνων τοιούτων εὐπορῇ τις, θᾶπτον ἐντεύξεται συμπεράσματι, ὅσῳ δ' ἂν (10) ἀληθεστέρων, μᾶλλον ἀποδείξει (1.27 43b1-11).

So one must select the premises about each subject in this way,

<sup>98</sup> Translated by Robin Smith (Smith 42), with modifications.

first laying down the subject itself and both its boundaries and whatever is peculiar to the subject, next after this, whatever follows the subject; next, whatever the subject follows; and then, whatever cannot belong to it. (Those to which it is not possible for the subject to belong need not be selected, because the privative converts). The terms which follow the subject must also be divided into those which are predicated of it essentially, those which are peculiar to it, and those which are predicated incidentally. And these, again, <should be divided> into such as are matters of opinion and such as are according to the truth. For to the extent that someone is supplied with more of these, he will more quickly hit on a conclusion; but to the extent that he is supplied with more true things, the more will he demonstrate.<sup>99</sup>

Here, terms that apply to the subject being studied are collected for the purpose of constructing a syllogism. In the first step, “ὑποθέμενον” (ὑποτίθημι) expresses the idea that the subject, what is peculiar to it, its boundaries (ὀρισμός), and that which it excludes should be laid down. The term ‘ὑποτίθημι’ is used for a similar purpose in illustrations of collection and division in Plato’s dialogues. For example, it is used in the *Statesman* to place *nurture* under a kind that differs from that of the statesman:

ΞΕ. Τὴν δὴ τῆς τροφῆς κτῆσιν, καὶ ὅσα εἰς τὸ σῶμα συγκαταμειγνύμενα ἑαυτῶν μέρεσι μέρη σώματος εἰς τὸ (α) θεραπεῦσαι τινα δύνάμιν εἴληγε, λεκτέον ἔβδομον ὀνομάσαντας αὐτὸ σύμπαν ἡμῶν εἶναι τροφόν, εἰ μὴ τι κάλλιον ἔχομεν ἄλλο θέσθαι· γεωργικῆ δὲ καὶ θηρευτικῆ καὶ γυμναστικῆ καὶ ἰατρικῆ καὶ μαγειρικῆ πᾶν ὑποτιθέντες ὀρθότερον ἀποδώσομεν ἢ τῇ πολιτικῇ (5). (288e8 – 289a5)

Stranger: Then again that sort of possession that consists in nutrition, and all those things which when they are blended into the body, their own parts with parts of the body, have a capacity for promoting its care, we must say is a seventh [kind], calling it all together ‘nurture,’ unless we have some more attractive term to propose. And if we place it under the arts of the farmer, the hunter, the trainer in the gymnasium, the doctor and the cook, we shall be assigning it more correctly than if we give it to the art of the statesman.<sup>100</sup>

<sup>99</sup> Translated by Robin Smith (Smith 42-43), with modifications.

<sup>100</sup> Translated by C.J. Rowe (Plato 332), with slight modifications.

In this passage, things that promote the care of the body are given the name ‘nurture’ (τροφός) and placed under (“ὑποτιθέντες”) the arts of the farmer, the hunter, the cook, etc. By placing *nurture* in a kind that differs from that of the statesman, the properties of the statesman become more clearly defined – i.e., he is not confused with those who are similar to him. As one of the three operations discussed in Chapter 2, *placing*, this is an important step in arriving at a definition since it indicates which attributes belong to the statesman and which do not. This parallels Aristotle’s instruction to determine which terms belong and which do not belong to the subject being studied (1.27 43b4-5 in the passage above).

Another passage from Chapter 30 of the *Prior Analytics* describes the method (ὁδός) for constructing syllogisms as follows:

Ἡ μὲν οὖν ὁδὸς κατὰ πάντων ἢ αὐτῆ καὶ περὶ φιλοσοφίαν καὶ περὶ τέχνην ὅποιανοῦν καὶ μάθημα· δεῖ γὰρ τὰ ὑπάρχοντα καὶ οἷς ὑπάρχει περὶ ἑκάτερον ἀθρεῖν, καὶ (5) τοῦτων ὡς πλείστων εὐπορεῖν, καὶ ταῦτα διὰ τῶν τριῶν ὄρων σκοπεῖν, ἀνασκευάζοντα μὲν ὠδί, κατασκευάζοντα δὲ ὠδί, κατὰ μὲν ἀλήθειαν ἐκ τῶν κατ’ ἀλήθειαν διαγεγραμμένων ὑπάρχειν, εἰς δὲ τοὺς διαλεκτικοὺς συλλογισμοὺς ἐκ τῶν κατὰ δόξαν προτάσεων (10). (1.30 46a3-10)

The method is the same with respect to all things, then, whether concerning philosophy or concerning any kind of art or study whatever. For one must discern the things which belong to each term and the things to which it belongs, and be provided with as many of them as possible, and examine these things through the three terms, refuting in this way and establishing that: <when arguing> in accordance with truth, <this must be> from things that have been strictly proved to belong in accordance with truth, but in dialectical deductions it is from premises according to opinion.<sup>101</sup>

---

<sup>101</sup> Translated by Robin Smith (Smith 48), with modifications.



Note the universal applicability of Aristotle’s method: it is the same in all the arts and all areas of inquiry (“Ἡ μὲν οὖν ὁδὸς κατὰ πάντων ἢ αὐτὴ καὶ περὶ φιλοσοφίαν καὶ περὶ τέχνην ὅποιαν οὖν καὶ μάθημα”). This echoes Socrates’ claim in the *Philebus* that it is through the way (ὁδὸς) of collection and division that all the discoveries of the arts are made (“πάντα γὰρ ὅσα τέχνης ἐχόμενα ἀνηυρέθη πρόποτε διὰ ταύτης φανερὰ γέγονε”; *Philebus* 16c).

Note too that according to the passage above we must “examine” (σκοπεῖν) the attributes and subjects of the terms of a deduction, another key word that is used in illustrations of collection and division (see Section 1.6.2, pg. 85). For example, the following exchange between Theaetetus and the Stranger occurs in the *Sophist* after Theaetetus asks how *appearance-making* (φανταστικὸν) should be divided:

ΞΕ. Μιμητικὸν δὴ τοῦτο αὐτῆς προσειπόντες ἀπονειμώ- (10)  
μεθα· τὸ δ’ ἄλλο πᾶν ἀφῶμεν μαλακισθέντες καὶ παρέντες  
(b) ἐτέρῳ συναγαγεῖν τε εἰς ἓν καὶ πρέπουσαν ἐπωνυμίαν  
ἀποδοῦναί τιν’ αὐτῷ.

ΘΕΑΙ. Νενεμήσθω, τὸ δὲ μεθείσθω.

ΞΕ. Καὶ μὴν καὶ τοῦτο ἔτι διπλοῦν, ὃ Θεαίτητε, ἄξιον  
ἠγεῖσθαι· δι’ ἃ δέ, σκόπει. (5)

ΘΕΑΙ. Λέγε.

ΞΕ. Τῶν μιμουμένων οἱ μὲν εἰδότες ὁ μιμοῦνται τοῦτο  
πράττουσιν, οἱ δ’ οὐκ εἰδότες· καίτοι τίνα μεῖζω διαίρεσιν  
ἀγνωσίας τε καὶ γνώσεως θήσομεν;

ΘΕΑΙ. Οὐδεμίαν (10). (267a10-b10)

Stranger: Let’s set this part off by calling it imitation, and let’s be lazy and let the other part go. We’ll leave it to someone else to bring it together into a unit and give it a suitable name.

Theaetetus: All right, let’s take the one and let the other go.

Stranger: But the right thing, Theaetetus, is still to take imitation to have two parts. Think about why.

Theaetetus: Tell me.

Stranger: Some imitators know what they’re imitating and some don’t. And what division is more important than the one between ignorance

and knowledge?<sup>102</sup>

Here, a part or aspect of *appearance-making* is given the name ‘imitation’ (‘Μιμητικὸν’). In turn, *imitation* is *examined* (“σκόπει”; 267b5) in order to determine its parts; in this case, the examination yields two aspects, one associated with ignorance and one with knowledge. Thus, examination can result in the discovery of the properties or parts of something, and this parallels the examination of attributes of terms in Aristotle’s method.

In her article on Greek commentators’ readings of the *Prior Analytics*, Miira Tuominen describes Aristotle’s procedure as a process of collecting terms that are to serve as predicates: “... what Aristotle recommends us to do is to collect a list of all the different kinds of predicates that belong to a subject and to distinguish the way in which they belong: i.e. whether they belong essentially; as a peculiar property (ἴδιον); for the most part; or accidentally...” (“Alexander and Philoponus” 143). Commentators such as Alexander of Aphrodisias and Philoponus applied this procedure by collecting terms that can serve as predicates for ethical subjects, such as ‘good’ (‘ἀγαθόν’) and ‘pleasure’ (‘ἡδονή’) (Tuominen, “Alexander and Philoponus” 148). A subset of the terms can then serve as a means by which the premises of a syllogism can be constructed. In some cases, the relations between the terms were defined using a geometric structure; e.g., Philoponus arranged the terms as a star-shaped map (Tuominen, “Alexander and Philoponus” 149).

According to Tuominen, both Alexander and Philoponus seem to think that the procedure is the same for constructing syllogisms to be employed in both dialectical and scientific arguments (“Alexander and Philoponus” 153). This resembles the wide scope of the method of collection and division. In her conclusion, Tuominen states the

---

<sup>102</sup> Translated by Nicholas P. White (Plato 291).

following about this procedure:

In every field of theoretical study which can be counted as a science, there is an intelligible structure to be found in the background, and a scientist should try to find out what this structure is like. For instance, if we study animals, we must pay attention to predicates that are shared universally among different species. In this way, we can group animals into larger classes that have some properties in common, because they share a common nature. Additionally, the fact that Alexander and Philoponus use an ethical example indicates that they follow Aristotle in assuming that there is a similar intelligible structure to be found in ethics as well (“Alexander and Philoponus” 153).

Tuominen also observes that Aristotle’s scheme for grouping predicates does *not* allow one to determine whether a predicate belongs to a subject (“Alexander and Philoponus” 143). Moreover she emphasizes that “Aristotle’s scheme provides us with a powerful tool for the production of syllogisms *only* on the condition that we already know all the relevant relations ...” (Tuominen, “Alexander and Philoponus” 143), and, as recent commentators have pointed out, Aristotle claims that division is useful for obtaining predicates. Citing *Posterior Analytics* 2.14, James Lennox states that divisions are useful “as a potentially exhaustive *source* of predicates from which to select appropriate predications” (98). Here, one starts with a general kind (e.g. animal) and by dividing it into sub-kinds (e.g., bird, fish), the predicates of the various sub-kinds come to light (Lennox 98). A similar way of reasoning is also seen in the illustrations of collection and division. For example, as discussed in Section 1.2.2 (pg. 26) in the *Sophist* the concept *art* is divided into *productive* and *acquisitive*, and the aspects of the latter (*by force* and *by exchange*) are revealed on further inspection.

The collection of terms and their placement into groups or geometric shapes that display a logical structure bears a resemblance to the final result of collection and

division: a set of interwoven names that serves as a framework. It will be argued below that a framework can be understood as a “background structure” that underlies other forms of reasoning, including syllogistic reasoning. In other words, to use Tuominen’s terminology, the intelligible structure that reflects a “common nature” among many things is a framework.

#### 4.4.3 Mereological formalizations

In this section, a system of mereology is used as a means to formalize the structures produced by collection and division. The basic concepts of mereology will be introduced below. Then, Section 4.4.3.3 will show how four moods of the first figure in Aristotle’s syllogistic can be derived from a logical framework defined by collection and division, after which Section 4.4.3.4 will formalize frameworks defined in the *Sophist* and the *Statesman*.

Mereology is the study of wholes and parts, and the most basic and intuitive relation in mereology is that of part to whole (Simons, *Parts: A Study in Ontology* 9). Simons points out that examples of the part-whole relation “are so legion, and it is so basic to our conceptual scheme, that it seems almost superfluous to offer examples,” but the following list provided by Simons indicates the scope and ubiquity of the part-whole relation: a trunk is part of a tree, a roof is part of a house, a chapter is part of a novel, a mountain’s summit is part of the mountain, and the opening shot of a battle is part of the battle (*Parts: A Study in Ontology* 9-11). Clearly, mereology covers wide ground; however, since this chapter focuses on the mereological formulation of definitions and

the syllogistic, this section will discuss mereological relations between universals (e.g., *courage* is a part of *virtue*, *man* is a part of *animal*).

Because the part-whole relation is “basic to our conceptual scheme” (Simons, *Parts: A Study in Ontology* 9-11) it is appropriate to use mereology to represent structures produced by collection and division – i.e., that which gives us the ability “to speak and to think” (*Phaedrus* 266b; see Section 1.6.3, pg. 88). However, there is a form of mereology that is incompatible with Plato’s views on wholes and parts. The standard formal theory of whole-part relations is classical extensional mereology, which was articulated by Stanislaw Leśniewski and developed into the Calculus of Individuals by Henry S. Leonard and Nelson Goodman (Simons, *Parts: A Study in Ontology* 1). Simons points out that extensional mereology is subject to a major criticism: it asserts the existence of individuals known as “mereological sums” for which we have no evidence outside of the theory of extensional mereology itself (*Parts: A Study in Ontology* 1). A mereological sum is just a collection – any collection, no matter how arbitrary, constitutes a mereological sum.<sup>103</sup> For this reason Verity Harte argues that classical extensional mereology is incompatible with Plato’s view on wholes and parts: for Plato, a whole does not exist merely because one may conceive of an arbitrary sum of items (17). Thus, it would be problematic, to say the least, to model collection and division on extensional mereology. However, the mereological deductions below rely on a minimal axiom set that excludes the axioms of even Minimal Extensional Mereology as defined by Simons (*Parts: A Study in Ontology* 31). Only two axioms based on a primitive mereological relation, the proper-part relation, are employed in the deductions below.

---

<sup>103</sup> For example, consider the following collection: (1) the tail of a cat, (2) the page of a book, and (3) a snowflake: according to classical extensional mereology even this collection is a sum and as such it is a composition, i.e., a whole of parts.

Two basic relations of mereology are the proper part relation and the overlap relation, where the latter is defined in terms of the former. The proper part relation is expressed using the ‘ $\ll$ ’ symbol as follows:

$x \ll y$ : *x is a proper part of y*

Here, variables signify unspecified objects that can be treated as individuals in the broad sense of the word; i.e., anything that can be treated as a single object – a person, a Form, a universal, etc. The proper-part relation is asymmetric (if  $x$  is a proper part of  $y$ , then  $y$  is not a proper part of  $x$ ) and transitive (if  $x$  is a proper part of  $y$ , and  $y$  is a proper part of  $z$ , then  $x$  is a proper part of  $z$ ). It is paralleled in the syllogistic by universal statements such as “All A is B,” and as shown below this relation is the basis of Barbara.

The overlap relation is expressed using the ‘ $\circ$ ’ symbol as follows:

$x \circ y$ : *x overlaps y*

This means that  $x$  and  $y$  have a part in common, but it leaves open the possibility that all parts of  $x$  are parts of  $y$  or vice versa. The *proper overlap* relation is more specific: it specifies that  $x$  and  $y$  have a part in common, but neither is a proper part of the other.

The difference between the proper part relation and the proper overlap relation is illustrated in figure 3. In the first diagram,  $x$  not only overlaps  $y$ ,  $x$  is a proper part of  $y$ . This relation is antisymmetric: while  $x$  is a part of  $y$ ,  $y$  is not a part of  $x$ . In this sense, we

can say that there is a “hierarchy” – in other words,  $y$  subsumes  $x$  (much as a genus subsumes a species), but not vice versa. The second and third diagrams illustrate the proper overlap relation. The second diagram makes evident the fact that the proper overlap relation, unlike the proper part relation, is symmetric:  $x$  overlaps  $y$  and  $y$  overlaps  $x$ . The third diagram illustrates why the proper overlap relation is not transitive:  $x$  overlaps  $y$  and  $y$  overlaps  $z$ , but  $x$  does not overlap  $z$ .

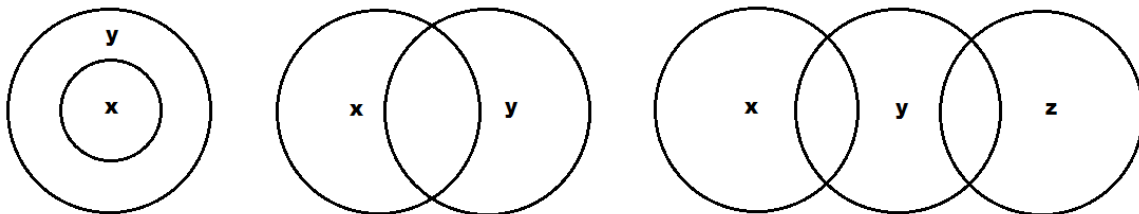


Fig. 3. Diagrams of proper-part (1) and proper-overlap (2-3) relations.

As shown in the derivations below, it is the proper part relation that dominates the syllogistic. In figure 3, we can see that in the first case, all  $x$  is  $y$ , but in the second and third cases, only some  $x$  is  $y$ . Thus, *if* collection and division produce a structure in which there is a hierarchy of parts – i.e., in which parts are *proper* parts, as in the first diagram, then transitivity applies, and the framework will serve as the basis for syllogistic reasoning. It will be argued in Section 4.4.3.4, however, that even in cases where the proper-part relation does not predominate, a framework can serve as the basis of deduction. Both kinds of framework (i.e., both hierarchical and non-hierarchical frameworks) will be formalized using non-extensional mereology below.

In the deductions in Section 4.4.3.3, the proper-part relation will be used to formalize the relations between parts of a logical framework produced by collection and

division and to express these relations as universal statements in Aristotle's syllogistic. For example, the statements 'Love is a kind of madness' and 'All love is madness' can be represented by the same mereological relation, 'love is a proper part of madness.' This will be explained further below. First, however, mereology will be compared with set theory for the purpose of justifying the use of the former instead of the latter.

#### 4.4.3.1 Mereology compared with set theory

In general, there are at least three reasons for choosing mereology over set theory for the purpose of formalizing collection and division and the syllogistic. First, as explained above, the foundational concepts of mereology, wholes, parts and their relations, play key roles in both collection and division and in Aristotle's syllogistic. For this reason, the formalization of whole-part relations in mereology is suitable for representing logical relations seen in both collection and division and the syllogistic.

Second, set theory includes the notion of the singleton. While this concept is useful within set theory, it is problematic, to say the least, for representing the reasoning behind collection and division and Aristotle's syllogistic. More specifically, the idea of a singleton calls into question the intuitive notions that a collection contains more than one item and that a whole contains more than one part. Observing that the founder of mereology, Stanisław Leśniewski, rejected the ideas of the null set and the singleton, Peter Simons describes the crucial difference between set theory and mereology as follows:

Quite properly, Leśniewski's intuitions did not allow him to accept such a thing, and



he railed against those set theorists who accepted a null set as engaging in specious invention ... The important difference between mereology and set theory lies not in the algebraically minor issue of whether there is a zero or not, but in the lack of singletons in mereology. Leśniewski denied that there is a difference between an object *a* and the singleton of *a*. (“Real Wholes” 600)

Simons also states that “it is in the existence of singletons distinct from their elements that almost all the power and magic of set theory resides” (“Real Wholes” 600). Thus, the concepts of the null set and the singleton call into question the suitability of set theory for representing collection and division and the syllogistic. The singleton is especially problematic, however, because the null set can be avoided in collection and division by stipulating that every series of divisions must terminate at the level of the individual. In other words, once the target has been reached, there is no need to continue dividing, and therefore the null set is avoided. However, this is not the case with the singleton – using sets, a series of divisions would terminate at the level of a set with one member, the target to be defined. For this reason, J.M.E. Moravcsik points out that while set theory is “cleaner” than cruder approaches such as those based on strictly hierarchical genus-species models, mereology is more suitable for representing division formally because it avoids the problem of the singleton (“Plato’s Method of Division” 167). According to Moravcsik, a set-theoretical interpretation of collection and division is based on the relations of class-membership and class-inclusion (“Plato’s Method of Division” 174). The problematic nature of this model in relation to division is as follows:

...while we carve off smaller and smaller sub-classes, we operate with the notion of class inclusion. But when we arrive at the final element ... we are considering not a sub-class but a member of the original generic class. Alternatively, we would have to assume that at the final cut in the division we have a class with only one member; and then we would have to attribute to Plato the distinction between a unit-class and its only element. Such an interpretation has no basis in the text and seems anachronistic

(Moravcsik, "Plato's Method of Division" 174).

Thus, the concept of a singleton, or a class with only one element, is problematic because it conflicts with the intuitive notion that a whole necessarily comprises more than one part. Mereology, on the other hand, avoids this difficulty, and it is general enough to include logical relations defined through collection and division and Aristotle's syllogistic.

Third, in mereology, no assumptions are made as to the composition of a whole, and a whole can be understood in terms of extension or intension. In the former case, each part of a whole can be understood as a particular; e.g., each individual that falls under the species 'Man' is considered a part of the species as a whole. Under some interpretations the syllogistic can be understood as a form of extensional reasoning, but it is questionable as to whether the extensional model is compatible with collection and division, and at least some argue that division is governed by a concept's *intension* (Moravcsik, "Plato's Method of Division" 167, Cohen 181). Regardless, a logical system that can represent both extensional and intensional forms of reasoning can avoid the incompatibility between the two, and mereology meets this criterion. In general, mereology is very inclusive; Simons remarks that outside of extensional mereology, mereology "is first and foremost a formal *analysis* of the part-whole relation and its cognates. As such it can have little or nothing to say about what parts or wholes there actually are or what is part of what, any more than an analysis of causation could tell us what events there are or what causes what." ("Real Wholes" 597).

#### 4.4.3.2 Axioms and definitions

The following axioms and definitions of non-extensional mereology are defined by Peter Simons in *Parts: A Study in Ontology* (26-28). A minimal axiom set is used to preclude incompatibility with metaphysical assumptions underlying the method of collection and division and the syllogistic. The fundamental axioms (SA) and definitions (SD) of mereology used in the deductions below are as follows:<sup>104</sup>

##### Axioms:

- SA0 Any axiom set sufficient for first-order predicate calculus with identity
- SA1  $\forall x \forall y (x \ll y \supset \sim y \ll x)$  *if x is a proper part of y, y is not a proper part of x*
- SA2  $\forall x \forall y \forall z ((x \ll y \ \& \ y \ll z) \supset x \ll z)$  *transitivity of proper parts*

##### Definitions:

- SD1  $\forall x \forall y (x < y \equiv x \ll y \vee x = y)$  *'x is a part of y' is equivalent to 'x is a proper part of y' or 'x is identical to y'*
- SD2  $\forall x \forall y (x \circ y \equiv \exists z (z < x \ \& \ z < y))$  *definition of the overlap relation*
- SD3  $\forall x \forall y (x \uparrow y \equiv \sim x \circ y)$  *definition of the disjoint relation*

---

<sup>104</sup> Universal quantifiers have been added to Simons' axioms and definitions for use in the derivations below.

Figure 4 diagrams some of the whole-part relations established by collection and division for the purpose of defining the angler (*Sophist* 219d-220a). Here, *a* stands for *acquisition* and is divided into two parts, *b* (*exchange*) and *c* (*hunting*). The latter is divided into *d* (*land hunting*) and *e* (*sea hunting*). As shown below, this logical framework will be used to express the four moods of the first figure.

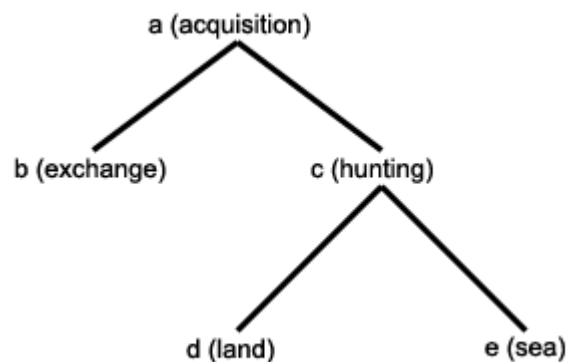


Fig. 4. Whole-part relations from the definition of the angler (*Sophist* 219d-220a).

#### 4.4.3.3 Deductions of the first figure

Each of the four moods of the first figure<sup>105</sup> will be represented below using a set of mereological relations defined by collection and division. Aristotle shows that the moods of the second and third figures can be reduced to the first figure (*Prior Analytics* 1.7 29b1-26), so the following section is limited to the first figure. After preliminary remarks on the formalization of the moods, mereological deductions of Barbara, Celarent, Darii, and Ferio will be presented.

<sup>105</sup> See Patzig (1, 13) for specifications of each mood.

In Section 3.2 it was argued that collection and division can produce both hierarchical and non-hierarchical structures. Thus, at least some of the parts of the definition of the angler can be understood in terms of the overlap relation. This interpretation will be discussed in Section 4.4.3.4 (pg. 225) below. Universal statements in the syllogistic, however, are based on the proper-part relation. In other words, to state that “All A is B” is the equivalent of stating in mereological terms that A is a proper part of B (i.e., “ $A \ll B$ ”). As explained above, the overlap relation is not transitive; e.g., if A overlaps B and B overlaps C, A does not necessarily overlap C (Section 4.4.3, pg. 211). For this reason, in the deductions below each universal premise of a syllogism is stated as an assumption in which an overlap relation defined by collection and division is specified as a proper-part relation. For example, ‘ $c \circ a$ ’ stands for ‘c overlaps a’ – i.e. (using the terms shown in figure 4), some of hunting is acquisition and, conversely, some of acquisition is hunting. This is compatible with the models of collection and division presented by Sayre, Moravcsik, and Grams, among others, which include the possibility of symmetric relations between parts of a whole (see Section 3.2.5, pg. 173). But in the deductions below, ‘ $c \circ a$ ’ is specified as ‘ $c \ll a$ ’ to represent the first premise of Darii, ‘All c is a,’ i.e., ‘All hunting is acquisition.’ As SA2 states, the proper part relation is transitive, and it is transitivity that underlies the logic of Darii and other syllogisms, as will be shown below. Similarly, universal negative statements are specified as disjoint relations. Thus, ‘ $c \uparrow b$ ’ (c is disjoint from b, i.e., c and b do not overlap) serves as the first premise of Celarent, “No C is B” – in this case, “No hunting is exchange.” In mereological terms, C and B do not have a part in common – i.e., they are disjoint.

Thus, in the following deductions, the premises of each syllogism represent the

mereological relations established by collection and division as shown in figure 4. For example, the premises of Barbara, (1) 'e << c' and (2) 'c << a,' derive from the following relations, respectively: (1) sea hunting (e) is a proper part of hunting (c), and (2) hunting (c) is a proper part of acquisition (a). The structure shown in figure 4 derives from 219d-220 in the *Sophist* and is used to define the premises of the four moods of the first figure, Barbara, Celarent, Darii, and Ferio.

The following deductions use rules for predicate logic with identity from Bergmann.

**Barbara:**

- 1. e << c
- 2. c << a

---

3. e << a

1.	e << c	Assumption
2.	c << a	Assumption
3.	e << c & c << a	1,2 &I
4.	(e << c & c << a) $\supset$ e << a	instantiation of SA2
5.	e << a	3,4 $\supset$ E

*Continued on next page*

**Celarent:**

1.  $c \iota b$
2.  $e \ll c$

---

3.  $e \iota b$

1.	$c \iota b$		
2.	$e \ll c$		Assumption
3.	$e \circ b$		Assumption
4.	$\exists z(z < e \ \& \ z < b)$		3 Substitution by SD2
5.	$f < e \ \& \ f < b$		Assumption
6.	$f < e$		5 &E
7.	$f \ll e \vee f = e$		6 Substitution by SD1
8.	$f \ll e$		Assumption
9.	$e \ll c \ \& \ f \ll e$		2,8 &I
10.	$f \ll e \ \& \ e \ll c$		9 Com
11.	$(f \ll e \ \& \ e \ll c) \supset f \ll c$		instantiation of SA2
12.	$f \ll c$		10,11 $\supset$ E
13.	$f = e$		Assumption
14.	$f \ll c$		2,13 $=$ E
15.	$f \ll c$		7,8-12,13-14 $\vee$ E
16.	$f \ll c \vee f = c$		15 $\vee$ I
17.	$f < c$		16 Substitution by SD1
18.	$f < b$		5 &E
19.	$f < c \ \& \ f < b$		17,18 &I
20.	$\exists y(y < c \ \& \ y < b)$		19 $\exists$ I
21.	$\exists y(y < c \ \& \ y < b)$		4,5-20 $\exists$ E
22.	$c \circ b$		21 Substitution by SD2
23.	$\sim c \circ b$		1 Substitution by SD3
24.	$\sim e \circ b$		3-23 $\sim$ I
25.	$e \iota b$		24 Substitution by SD3

*Continued on next page*

**Darii:**

1.  $c \ll a$

2.  $e \circ c$

---

3.  $e \circ a$

1.	$c \ll a$	Assumption
2.	$e \circ c$	Assumption
3.	$\exists z (z < e \ \& \ z < c)$	2 Substitution by SD2
4.	$f < e \ \& \ f < c$	Assumption
5.	$f < c$	4 &E
6.	$f \ll c \vee f = c$	5 Substitution by SD1
7.	$f \ll c$	Assumption
8.	$c \ll a \ \& \ f \ll c$	1,7 &I
9.	$f \ll c \ \& \ c \ll a$	8 Com
10.	$(f \ll c \ \& \ c \ll a) \supset f \ll a$	instantiation of SA2
11.	$f \ll a$	9,10 $\supset$ E
12.	$f = c$	Assumption
13.	$f \ll a$	1,12 =E
14.	$f \ll a$	6, 7-11, 12-13 $\vee$ E
15.	$f \ll a \vee f = a$	14 $\vee$ I
16.	$f < a$	15 Substitution by SD1
17.	$f < e$	4 &E
18.	$f < a \ \& \ f < e$	16, 17 &I
19.	$f < e \ \& \ f < a$	18 Com
20.	$\exists y (y < e \ \& \ y < a)$	19 $\exists$ I
21.	$\exists y (y < e \ \& \ y < a)$	3, 4-20 $\exists$ E
22.	$e \circ a$	21 Substitution by SD2

*Continued on next page*



**Ferio:**

- 1.  $c \uparrow b$
- 2.  $e \circ c$

---

3.  $\exists x(x < e \ \& \ \sim x < b)$

1.	$c \uparrow b$	Assumption
2.	$e \circ c$	Assumption
3.	$\sim c \circ b$	1 Substitution by SD3
4.	$\sim \exists z(z < c \ \& \ z < b)$	3 Substitution by SD2
5.	$\forall z \sim(z < c \ \& \ z < b)$	4 QN
6.	$\exists z(z < e \ \& \ z < c)$	2 Substitution by SD2
7.	$f < e \ \& \ f < c$	Assumption
8.	$\sim(f < c \ \& \ f < b)$	5 $\forall E$
9.	$\sim f < c \vee \sim f < b$	8 DeM
10.	$f < c$	7 $\&E$
11.	$\sim \sim f < c$	10 DN
12.	$\sim f < b$	9,11 DS
13.	$f < e$	7 $\&E$
14.	$\sim f < b \ \& \ f < e$	12,13 $\&I$
15.	$f < e \ \& \ \sim f < b$	14 Com
16.	$\exists x(x < e \ \& \ \sim x < b)$	15 $\exists I$
17.	$\exists x(x < e \ \& \ \sim x < b)$	6,7-16 $\exists E$

In conclusion, a framework serves as the basis of a syllogism by establishing the relations between its terms. More specifically, a framework shows how named parts are placed relative to each other – i.e., how parts of a logical whole interrelate. Without a framework, the logical relations from which a syllogism derives its deductive power would remain undefined. In other words, it is through collection and division that names are woven into a structure that serves as the logical basis of deductive reasoning.

#### 4.4.3.4 Formalization of structures defined in the Sophist and the Statesman

As argued in Section 3.2.5 (pg. 173), models that allow for non-hierarchical relations more accurately describe the various structures defined through collection and division. More specifically, a framework defined through collection and division is not necessarily restricted to proper part relations. To illustrate this, the three diagrams shown in figure 5 show how *acquisition*, *hunting*, and *sea hunting* (parts a, c, and e of the angler tree shown in figure 4 above) can be represented either hierarchically or non-hierarchically.

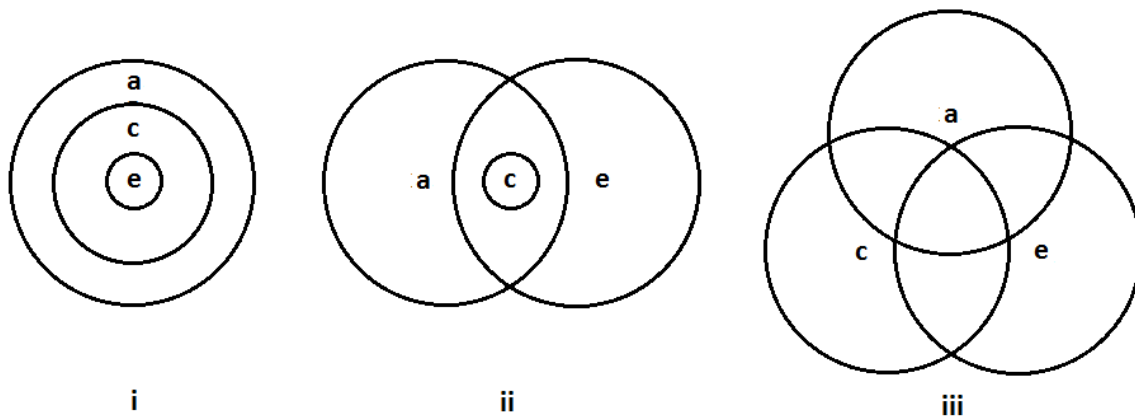


Fig. 5. Hierarchical and non-hierarchical interpretations of the relations between *acquisition* (a), *hunting* (c), and *sea hunting* (e) described at 219d-220a in the *Sophist*.

The first diagram (i) shows a strictly hierarchical relation of proper parts: *sea hunting* (e) is a proper part of *hunting* (c), and *hunting* is a proper part of *acquisition* (a). This interpretation is compatible with the premises of Barbara shown in the previous section.

The second diagram (ii) includes not only the proper-part relation (c is a proper part of

both a and e), it also includes a proper overlap relation (a overlaps e, but neither is a proper part of the other). The third diagram in figure 5 (iii) does not include any proper part relations; instead, a, c, and e exhibit the proper overlap relation.

The following formula,<sup>106</sup> which expresses a set of overlapping relations, is compatible with all three interpretations shown in figure 5:

$$F1: \quad \exists x(x < a \ \& \ x < c \ \& \ x < e)$$

In the formula F1, since there is an x such that  $x < a$  and  $x < c$ , a and c have a part in common; i.e., they overlap.<sup>107</sup> In other words, considering the first conjunction in F1,  $\exists x(x < a \ \& \ x < c) \equiv a \circ c$ . Similarly, the remaining pairs of relations in F1 express the following equivalences:

$$\begin{aligned} \exists x(x < a \ \& \ x < e) &\equiv a \circ e \\ \exists x(x < c \ \& \ x < e) &\equiv c \circ e \end{aligned}$$

Thus, given SD2, the formula  $\exists x(x < a \ \& \ x < c \ \& \ x < e)$  implies that  $(a \circ c \ \& \ a \circ e \ \& \ c \circ e)$ .<sup>108</sup>

---

<sup>106</sup> For ease of reference, formulas referred to in the text will be labelled  $F_n$ , where  $n$  indicates the order in which the formula is introduced.

<sup>107</sup> SD2 defines the overlap relation as follows:  $\forall x \forall y (x \circ y \equiv \exists z (z < x \ \& \ z < y))$ . Thus, two wholes overlap if they have a part in common.

<sup>108</sup> Note, however, that  $(a \circ c \ \& \ a \circ e \ \& \ c \circ e)$  does not imply F1, because the former leaves open the possibility that the part common to a and c, the part common to a and e, and the part common to c and e are not identical. More specifically, by SD2 the following equivalence holds:

$$(a \circ c \ \& \ a \circ e \ \& \ c \circ e) \equiv \exists x(x < a \ \& \ x < c) \ \& \ \exists y(y < a \ \& \ y < e) \ \& \ \exists z(z < c \ \& \ z < e)$$

This allows for the possibility that x, y, and z are not identical. But the formula  $\exists x(x < a \ \& \ x < c \ \& \ x < e)$  implies that the same part, x, is a part of a, c, and e, and by SD2 this implies that a, c, and e all overlap, as shown in figure 5.

The formula F1 leaves open the following possibilities: (1) all of the parts of the framework under consideration are proper parts (as shown in diagram (i) in figure 5);<sup>109</sup> (2) some of the parts are proper parts (as shown in (ii)); and (3) the entire framework is a non-hierarchical structure of overlapping parts (as shown in (iii)). Thus, the formula F1 allows for the possibility that the framework being defined is hierarchical (i), non-hierarchical (iii), or both hierarchical and non-hierarchical (ii). In the case of the angler, F1 does not make the unnecessary assumption that *hunting* is “contained” by (i.e., is a proper part of) *acquisition*; rather, it allows for the possibility that *hunting* and *acquisition* are overlapping concepts; as such, F1 is compatible with the Fabric and Lens models described in Section 3.2.

In general, the advantage of defining frameworks in terms of overlapping concepts, as with F1 above, is that the overlap relation is not overly restrictive; it permits a wide range of interpretations. In cases where it is not clear whether a hierarchical or non-hierarchical structure is being defined, the overlap relation is specific enough to show that concepts are interrelated (e.g., *hunting* overlaps with *acquisition*) but general enough to allow for the possibility that a non-hierarchical structure is being defined.

Moreover, in some cases it is evident that the overlap relation as well as the proper part relation is needed to accurately define a framework. For example, consider the division of *number* into *odd* and *even* in the *Statesman* (262c -263a; see Appendix A 25). Using ‘n’ to stand for *number*, ‘o’ to stand for *odd* and ‘e’ for *even*, the relations between these three concepts can be formalized as follows:

---

<sup>109</sup> In the first diagram of figure 5, e is not only a proper part of c, it also overlaps c; similarly, c is both a proper part of a, and c overlaps a. As stated in Section 4.4.3 (pg. 211), the overlap relation (as distinguished from the *proper* overlap relation) does not exclude the proper part relation.

F2:  $o \ll n \ \& \ e \ll n \ \& \ o \ \iota \ e$

Here, the proper part relation is specified because all odd numbers are numbers ( $o \ll n$ ) and all even numbers are numbers ( $e \ll n$ ). In other words, we know that no odd number is not a number (and similarly for even numbers), so the proper part relation holds. The formula F2 also specifies that no odd number is an even number; i.e., *odd* and *even* do not have a part (a number) in common, so they are disjoint ( $o \ \iota \ e$ ). F2 is limited to the proper part and disjoint relations, but if the framework being defined is expanded to include prime numbers ( $p$ ), then the overlap relation is required, as shown in the following formula:

F3:  $(o \ll n \ \& \ e \ll n \ \& \ o \ \iota \ e) \ \& \ (p \ll n \ \& \ p \ \circ \ e \ \& \ p \ \circ \ o)$

In this formula, ' $p \ll n$ ' indicates that all prime numbers are numbers, ' $p \ \circ \ e$ ' indicates that prime numbers and even numbers overlap,<sup>110</sup> and similarly ' $p \ \circ \ o$ ' indicates that prime numbers and odd numbers overlap. This formalization incorporates a mixture of hierarchical relations (i.e., proper part relations) as well as non-hierarchical relations (relations of overlap). Thus, the overlap relation as well as the proper part relation is needed to accurately define the framework being described.

Interpretations based on the overlap relation allow for consistency in interpreting passages in the dialogues in which a single concept can be seen to overlap with two other concepts. For example, in the *Sophist*, *production* is divided into *divine* and *human*

---

<sup>110</sup> The number 2 is the only even prime number. Hence, even numbers and prime numbers overlap; more specifically, the number 2 is a part of the collection of prime numbers, while all other even numbers are not.

aspects (265e), while in the *Phaedrus*, it is *madness* that is divided into the *divine* and the *human* (265a). Taking the two passages in these dialogues as a whole, the concepts of the *divine* and the *human* overlap not only with *production*, but with the concept of *madness* as well. Under one reading, the relations between the *divine* and the *human* and *production* and *madness* can be represented as a hierarchy, as follows:

F4:  $h \ll p \ \& \ d \ll p \ \& \ h \ll m \ \& \ d \ll m$

But why should this be the case? A more convincing reading of the passages in question is that the *divine* and the *human* are aspects of many things, including *production* and *madness*. As such, the *divine* and *human* overlap with other concepts, as opposed to being proper parts of them. Under this interpretation, which in my view is much more convincing, the following formalization applies:

F5:  $h \circ p \ \& \ d \circ p \ \& \ h \circ m \ \& \ d \circ m$

This formula specifies that the *human* and the *divine* are aspects of both *production* and *madness*. It is not too specific, however; i.e., F5 is broad enough to leave open a variety of possibilities. For example, upon further investigation, one can conclude that *production* and *madness* overlap ( $p \circ m$ ) or, conversely, that they are disjoint ( $p \uparrow m$ ), without contradicting the relations specified in F5. These possibilities serve as open questions that can be pursued or ignored, depending on their relevance to the definition being formulated; i.e., depending on the target being defined, one can flesh out only part

of the framework. More specifically, if the target falls within a particular section of the framework, the parts that fall outside of the section can be ignored, while the section itself can be refined further through collection and division. Arguably, this is done at 265e5-266a10 in the *Sophist*, where (employing the overlap relations of F5 as a basis of interpretation) the overlap between *human* and *divine* and *production* (the first two conjuncts of F5) is developed to include two other concepts, *copy-making* and *production of originals*. Under this interpretation, the relations between the concepts can be represented by the diagram shown in figure 6.

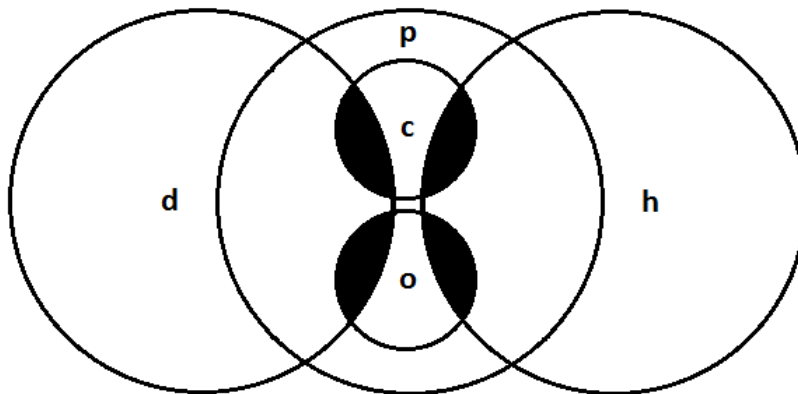


Fig. 6. Diagram showing overlap between *production* (p), the *divine* (d), the *human* (h), *copy-making* (c), and the *production of originals* (o)

As discussed in Section 2.2.3.1 (pg. 125), one need not assume that a hierarchy of proper parts is being defined; i.e., there is the possibility that *human* and *production* on the one hand, and *divine* and *production* on the other, are overlapping pairs in a non-hierarchical structure. Thus, the relations shown in figure 6 may be expressed in terms of overlapping parts, as follows:<sup>111</sup>

<sup>111</sup> F6 leaves open the possibility that there is a proper overlap relation, rather than a proper part relation,

$$F6: \quad \exists x(x < p \ \& \ x < h \ \& \ x < c) \ \& \ \exists y(y < p \ \& \ y < d \ \& \ y < c) \ \& \\ \exists z(z < p \ \& \ z < h \ \& \ z < o) \ \& \ \exists w(w < p \ \& \ w < d \ \& \ w < o) \ \& \ (h \ \iota \ d)$$

In figure 6, considering the part of *production* that is relevant to the sophist (i.e., *copy-making* as opposed to *production of originals*), the shaded area on the right side of c (the intersection of c and h) represents the part that is common to *production*, *human*, and *copy-making* (i.e., the first conjunct in F6), while the shaded area on the left side of c (the intersection of c and d) represents the part that is common to *production*, *divine*, and *copy-making* (the second conjunct in F6).<sup>112</sup>

Even in an interpretation which includes the proper overlap relation, as shown in figure 6, the lack of a strict hierarchy does not hinder the completion of a framework that defines the target. In this case, the sophist can be “placed” in one section of the framework, i.e., the section defined by the overlap of *production*, *human*, and *copy-making*. In other words, the sophist can be placed in the part that is common to p, h, and c:

$$F7: \quad \exists x(x < p \ \& \ x < h \ \& \ x < c)^{113}$$

---

between *copy-making* (c), *production of originals* (o), and *production* (p). The diagram, however, implies that c and o are proper parts of p since it seems more intuitive to assume that all copy-making is a form of production (and, clearly, all forms of the production of originals are forms of production). In any case, the point is that in contrast to the hierarchical structure shown in figure 2, in figure 6, while c and o overlap *human* (h) and *divine* (d), they are not proper parts of them.

<sup>112</sup> A similar set of relations applies to *production of originals*, which, as figure 6 shows, mirrors *copy-making*. Thus, under this interpretation, when the Stranger refers to four parts at 266a4 (“Τέτταρα μὴν αὐτῆς οὕτω τὰ πάντα μέρη γίγνεται”), he is referring not to four compound concepts, *human-copy-making*, *divine-copy-making*, *human-production-of-originals*, *divine-production-of-originals*, but to the four ways in which the following concepts overlap: *human*, *divine*, *copy-making*, and *production of originals*. The latter interpretation leaves open the possibility that the four concepts under consideration overlap with other concepts (e.g., *madness*) in multifarious ways.

<sup>113</sup> SD2 defines the overlap relation as follows:  $\forall x\forall y(x \circ y \equiv \exists z(z < x \ \& \ z < y))$ . Thus, F6 and F7 imply



As will be explained below, placing the target to be defined within a part that is common to overlapping parts distinguishes the target from those with whom he may be confused; in this case, the sophist, as a producer of copies, is distinguished from those who engage in original production.

Another advantage of the framework represented by F6 is brought to light by a flaw in the hierarchical tree shown in figure 2: the latter is counter-intuitive in the sense that *copy-making* on the one hand, and *production of originals* on the other, each occupy two places in the framework. More specifically, in terms of *copy-making*, if a strict hierarchy is assumed, i.e., if *copy-making* is a proper part of both *human* and *divine*, and *human* and *divine* are disjoint,<sup>114</sup> then there are two disjoint parts for only one concept, *copy-making*. However, contrary to what is conveyed by the tree diagram in figure 2, a more convincing reading of the passage in question is expressed by F6: i.e., *copy-making* is *one* concept that overlaps with other concepts, such as *human* and *divine*, and the same holds for *production of originals*.<sup>115</sup>

Stated negatively, one reason for *not* using a strictly hierarchical model is that such a model leads to the conclusion that there are multiple concepts when, in fact, there is only one concept under consideration. Thus, consider the following formalization of the hierarchical tree diagram shown in figure 2:

---

the following overlap relations:  $p \circ h \ \& \ p \circ c \ \& \ h \circ c$ .

<sup>114</sup> That *human* and *divine* are disjoint is made evident in the dialogue; the Stranger makes it clear at 265c-e in the *Sophist* that he is talking about gods when he talks of the divine producers.

<sup>115</sup> Hypothetically, the framework expressed by F6 could be expanded to show that *copy-making* overlaps not only with *human* and *divine*, but with other kinds as well; e.g., animals and machines also produce copies.

F8:  $(c \ll d \ \& \ o \ll d \ \& \ d \ll p) \ \& \ (c \ll h \ \& \ o \ll h \ \& \ h \ll p) \ \& \ (h \ \uparrow \ d)$

This states that *copy-making* and *production of originals* are proper parts of *divine* ( $c \ll d \ \& \ o \ll d$ ), and in turn *divine* is a proper part of *production* ( $d \ll p$ ); similarly, *copy-making* and *production of originals* are proper parts of *human* ( $c \ll h \ \& \ o \ll h$ ), and in turn *human* is a proper part of *production* ( $h \ll p$ ). F8 also states that *human* and *divine* do not overlap ( $h \ \uparrow \ d$ ).

In fact, F8 is self-contradictory; i.e., a contradiction results if, as stated in F8, the following assumptions hold: (1) *divine* and *human* are disjoint, (2) *divine* and *human* are proper parts of *production*, and (3) *copy-making* is a proper part of both *divine* and *human*. The following proof shows that there is a contradiction if these assumptions are made.

*Continued on next page.*

1.	$d \ll p \ \& \ h \ll p \ \& \ h \ \iota \ d$	Assumption
2.	$c \ll d \ \& \ c \ll h$	Assumption
3.	$c \ll d$	2 &E
4.	$c \ll d \vee c = d$	3 $\vee$ I
5.	$c < d$	4 Substitution by SD1
6.	$c \ll h$	2 &E
7.	$c \ll h \vee c = h$	6 $\vee$ I
8.	$c < h$	7 Substitution by SD1
9.	$c < d \ \& \ c < h$	5,8 &I
10.	$c < h \ \& \ c < d$	9 Com
11.	$\exists x(x < h \ \& \ x < d)$	10 $\exists$ I
12.	$h \ \iota \ d$	1 &E
13.	$h \circ d$	11 Substitution by SD2
14.	$\sim h \circ d$	12 Substitution by SD3
15.	$\sim(c \ll d \ \& \ c \ll h)$	2-14 $\sim$ I

In the above proof, lines 1 and 2 express the hierarchical relations between *divine*, *human*, *production*, and *copy-making*, as specified in F8. The conclusion shows that, given these assumptions, it is not possible for *copy-making* to be a proper part of both *divine* and *human*. A similar proof can be constructed that reaches the same conclusion about *production of originals*; i.e., if, as indicated in F8, *production of originals* is a proper part of *human* and *divine*, and *human* and *divine* are disjoint, then a contradiction will result unless it is assumed that there are two disjoint forms of *production of originals*. Yet, a much more intuitive reading of the Stranger's divisions is that there is only *one* concept that corresponds to *copy-making*, and only *one* concept that corresponds to *production of originals*, and in each case the concept overlaps with other concepts, such as *human*, *divine* and *production*.<sup>116</sup> This reading is expressed by the overlapping

<sup>116</sup> The Stranger's remarks to Theaetetus at 240a in the *Sophist* support this reading:

ΞΕ. Τὸ διὰ πάντων τούτων ἂ πολλὰ εἰπὼν ἠξίωσας ἐνὶ  
προσειπεῖν ὀνόματι φθεγξάμενος εἰδῶλον ἐπὶ πᾶσιν ὡς ἔν (5)  
ὄν... (240a4-6)

relations specified in F7. In addition to avoiding the contradictions inherent in the hierarchical framework of F8, the non-hierarchical reading also agrees with the argument in the *Republic* that concludes that each Form is unique (597c-d); i.e., it would be mistaken to assume that there are two Forms of bed, for example – there can be only one (see Section 1.6.3, pg. 88).

It is important to note that non-hierarchical structures do not preclude deductive inference; i.e., a hierarchy of proper parts (as in, e.g., Barbara) is not a necessary condition for deduction. As an example, in Section 1.3.2 (pg. 44) it was stated that in the *Statesman* the Stranger divides *directive expertise* (ἐπιτακτική τέχνη; 260c6; see Appendix A 21) into two kinds, one kind comprising interpreters, seers, heralds and the like, while the other kind consists of self-directors (260c-261a). In addition, no member of the former kind is a self-director (260c-d). Thus, the part of *directive expertise* that comprises interpreters, seers, etc.<sup>117</sup> is disjoint from the part that comprises self-directors.

The relations between interpreters, the statesman and directive expertise can be understood in terms of overlapping and non-overlapping parts to show that even a non-hierarchical framework can be the basis of a deduction that reveals hidden relations between the parts of a whole. More specifically, while *interpreters* (i) and *self-directors*

---

Stranger: He [the sophist] will ask about what runs through all those things which you call many, but which you thought you should call by the one name, *copy*, to cover them all, as if they were all one thing... (translated by Nicholas P. White; Plato 260)

To paraphrase, the Stranger tells Theaetetus that the sophist would argue that there is *one* thing, the idea of a *copy*, that runs through the many. Since this claim agrees with the theory of Forms (and, moreover, with the underlying principles of collection, which brings the many into one), it cannot be rejected by Theaetetus.

<sup>117</sup> The Stranger does not name the kind that comprises interpreters, seers, heralds, etc., since the statesman is not a member of their group (260e-261a), and for the sake of brevity this kind will be referred to as “interpreters” in the discussion that follows.

(s) overlap with *directive expertise* (d) – i.e.,  $(i \circ d \ \& \ s \circ d)$  – *interpreters* do not overlap with *self-directors* – i.e., both kinds are disjoint  $(i \uparrow s)$ . Using these relations as premises, it can be deduced that there is at least one part of *directive expertise* that is (1) a part of the self-directing kind and (2) separate from the kind that comprises interpreters and the like. The following proof demonstrates this.

*Continued on next page.*

1.	$i \circ d$	Assumption
2.	$s \circ d$	Assumption
3.	$i \uparrow s$	Assumption
4.	$\exists x(x < s \ \& \ x < d)$	2 Substitution by SD2
5.	$a < s \ \& \ a < d$	Assumption
6.	$a \circ i$	Assumption
7.	$\exists y(y < a \ \& \ y < i)$	6 Substitution by SD2
8.	$z < a \ \& \ z < i$	Assumption
9.	$z < a$	8 &E
10.	$a < s$	5 &E
11.	$z \ll a \vee z = a$	9 Substitution by SD1
12.	$z \ll a$	Assumption
13.	$a \ll s \vee a = s$	10 Substitution by SD1
14.	$a \ll s$	Assumption
15.	$z \ll a \ \& \ a \ll s$	12,14 &I
16.	$(z \ll a \ \& \ a \ll s) \supset z \ll s$	instantiation of SA2
17.	$z \ll s$	15,16 $\supset$ E
18.	$a = s$	Assumption
19.	$z \ll s$	12,18 $=$ E
20.	$z \ll s$	13,14-17,18-19 $\vee$ E
21.	$z \ll s \vee z = s$	20 $\vee$ I
22.	$z < s$	21 Substitution by SD1
23.	$z = a$	Assumption
24.	$z < s$	10,23 $=$ E
25.	$z < s$	11,12-22,23-24 $\vee$ E
26.	$z < i$	8 &E
27.	$z < s \ \& \ z < i$	25,26 &I
28.	$z < i \ \& \ z < s$	27 Com
29.	$\exists w(w < i \ \& \ w < s)$	28 $\exists$ I
30.	$i \circ s$	29 Substitution by SD2
31.	$i \circ s$	7,8-30 $\exists$ E
32.	$\sim i \circ s$	3 Substitution by SD3
33.	$\sim a \circ i$	6-32 $\sim$ I
34.	$a < s \ \& \ a < d \ \& \ \sim a \circ i$	5,33 &I
35.	$\exists w(w < s \ \& \ w < d \ \& \ \sim w \circ i)$	34 $\exists$ I
36.	$\exists w(w < s \ \& \ w < d \ \& \ \sim w \circ i)$	4,5-35 $\exists$ E

The conclusion of this proof states that there is a part of *directive expertise* ( $w < d$ ) that does not overlap with another part of the whole, i.e., the part comprising interpreters and the like ( $\sim w \circ i$ ), but instead it is a part of the *self-directing* aspect of *directive expertise* ( $w < s$ ). In the dialogue, the statesman is located in this part (260e-

261a; Appendix A 21), and this placement serves to refine the definition of the statesman by specifying that he is similar to interpreters in one respect (both the statesman and interpreters are parts or aspects of *directive expertise*), but different in a key respect (unlike interpreters, the statesman is a self-director). The discovery of the difference moves the dialogue one step closer to arriving at a definition that distinguishes the statesman from all those with whom he appears to be similar. Moreover, in the above example, the part *w* can be named and treated as a concept in its own right, and through repeating the process (i.e., determining which concepts do and do not overlap with *w*), the framework can be developed even further.<sup>118</sup>

In general, interpretations that are based on overlapping as opposed to proper parts agree with many other passages featuring collection and division. For example, one reading of the definition of love in the *Phaedrus* (265a-c; see figure 1) is that while *human* and *divine* overlap with *madness*, they do not overlap with each other (i.e., they are disjoint), and there are parts of *divine* (e.g., Ἀφροδίτη and Ἔρως) that overlap with *madness*, but not with *human madness*. This reading parallels the interpretation of the passage from the *Statesman* (260c-261a) discussed just above, where it was stated that while *interpreters* and *self-directors* overlap with *directive expertise*, *interpreters* and *self-directors* are disjoint, and there is a part of the latter (e.g., the statesman) that overlaps with *directive expertise*, but not with *interpreters*. Similarly, in the *Sophist*, *likeness-making* and *appearance-making* are disjoint, yet both overlap with *copy-making* (236c; see Appendix A 14). The sophist, as a producer of appearances (264d), can be

---

<sup>118</sup> Note that, as stated in Section 1.1, a framework produced by collection and division in and of itself is not sufficient for deductive reasoning; rather, the point is that even a non-hierarchical framework can provide the basis for such reasoning provided that the reasoner performs the additional steps needed for deductive inference.

distinguished from other copy-makers in this key respect.<sup>119</sup> In all of these cases, the overlap relation and its negation can be used to distinguish the target from that with which it is similar. Thus, the overlap relation can be used as the basis of a framework that serves to define the target.

#### 4.5 Conclusion

Arguably, logical consequence and the use of variables distinguish the syllogistic from other forms of reasoning. For these reasons, one may conclude that the syllogistic is an entirely new development in the history of logic. In opposition to this view is the central thesis of this chapter: whole-part relations defined through collection and division make possible deductive inference. By articulating the parts of a whole, collection and division define the limits between the parts, thereby revealing a logical framework.

If the parts of a whole are arranged hierarchically, then syllogistic inference is possible; i.e., a definition produced by collection and division that expresses proper-part relations can serve as a framework through which a syllogism can be formulated.

In terms of the three operations discussed in Chapter 2, *seeing* and *naming* define the terms of a syllogism, while *placing* defines the premises (i.e., the interrelations between the terms). As explained in Section 3.3 (pg. 180), if errors are introduced into a framework through incorrect application of one or more of the operations, then deductions that rest on the framework are flawed. On the other hand, the correct application of the three operations provides the logical structure that underlies deductive

---

<sup>119</sup> Stated negatively, even if one is a copy-maker, one is *not* a sophist if one produces likenesses as opposed to appearances.



reasoning.

As explained above, collection and division often define non-hierarchical relations between overlapping parts. In this case, mereology can be used to articulate some of the structures described in dialogues such as the *Sophist* and the *Statesman*. Section 4.4.3.4 showed that even frameworks in which the proper part relation does not predominate can serve as the basis of deductive reasoning.

The following chapter will discuss the relation between collection and division and non-deductive reasoning. Focusing on the formulation of definitions in the *Meno* and the *Euthyphro*, Chapter 5 will defend the thesis that collection and division define logical frameworks that underlie non-deductive reasoning.

## Chapter 5

### Collection and Division and Non-deductive Reasoning

#### 5.1 Introduction

As stated in Section 1.1, the purpose of this work is to defend the thesis that collection and division define logical frameworks that underlie deductive and non-deductive reasoning. The previous chapter discussed the relation between collection and division and deductive reasoning. The purpose of this chapter is to defend the final part of the thesis: logical frameworks produced by collection and division underlie non-deductive reasoning. As will be explained below, this chapter will focus on reasoning at the level of statements and definitions as opposed to argumentative reasoning.

The motivation for this chapter is as follows. If frameworks defined by collection and division serve as the basis only for deductive reasoning, then collection and division would be narrow in scope. But as argued in Chapter 1, collection and division have a wide scope; indeed, they allow us to think and to speak, according to Socrates (see Section 1.6.3, pg. 88). If this is the case, collection and division are not just the basis of deductive systems such as the syllogistic; rather, collection and division are seen in many other forms of reasoning as well. The purpose of this chapter is to explain in more detail the ways in which collection and division underlie non-deductive reasoning. More specifically, I will argue that even reasoning that operates at the statement level – i.e., reasoning that is neither based on a premise-conclusion structure nor a skill-based procedure as seen in the *Statesman* and *Sophist* – is based on collection and division.

Even the formulation of a definition that is the result neither of a procedure nor a set of premises is also a form of reasoning that rests on collection and division. This is the central claim of this chapter.

Two definitions have been chosen to best illustrate the relation between collection and division and non-deductive reasoning: Meno's definition of virtue and Euthyphro's definition of piety. At first glance, these definitions do not appear to be related to collection and division. But the key words here are "at first glance": I will argue below that collection and division are very much involved in these cases, even though they are not explicitly mentioned. First, however, an outline of each section of this chapter is provided below.

Section 5.2 will clarify the term 'definition,' while Sections 5.3 and 5.4 will discuss the definition of virtue presented in the *Meno* (71e - 72a) and the definition of piety presented in the *Euthyphro* (5d-e), respectively. Section 5.5 will conclude by explaining that Meno's definition of virtue expresses only a partial application of the three operations of collection and division. Nonetheless, although the framework defined by Meno is incomplete, at least some parts of virtue are discerned and named, bringing Meno one step closer to a coherent definition by means of collection and division. The *Euthyphro*, on the other hand, shows how whole-part reasoning applies to both individuals and collections thereof as well as to universals.

## 5.2 Definitions compared to lists

A definition is a logical framework: it is the result of a process in which the parts of a conceptual whole are discerned, named, and placed within a structure, even if each step of the process that leads to the definition is not explicitly stated. Just as the premises of an argument may be unstated, the steps of collection and division that produce a definition may remain unexpressed. As an example, consider this definition of piety from the *Euthyphro*:

ΕΥΘ. Λέγω τοίνυν ὅτι τὸ μὲν ὅσιόν ἐστὶν ὅπερ ἐγὼ νῦν ποιῶ, τῷ ἀδικοῦντι ἢ περὶ φόνοῦς ἢ περὶ ἱερῶν κλοπᾶς ἢ τι ἄλλο τῶν τοιούτων ἐξαμαρτάνοντι ἐπεξιέναι, εἴαντε πατήρ (10) (e) ὢν τυγχάνη εἴαντε μήτηρ εἴαντε ἄλλος ὅστισοῦν, τὸ δὲ μὴ ἐπεξιέναι ἀνόσιον. (5d8-5e2)

Euthyphro: I say that the pious is to do what I am doing now, to prosecute the wrongdoer, be it about murder or temple robbery or anything else, whether the wrongdoer is your father or your mother or anyone else; not to prosecute is impious.<sup>120</sup>

This passage does not exhibit deductive reasoning, nor does it have a premise-conclusion structure, but it does express a relation between wholes and parts: piety is a kind of prosecution – more precisely, piety is a named part of prosecution, the prosecution of wrong-doing. In short, the definition tells us how piety and prosecution fit together into a whole; i.e., it outlines a whole that is divided into named parts.

This form of reasoning can be contrasted with unstructured thinking; i.e., it can be distinguished from “collections” of a sort that lack structure and order. To illustrate this point, the definition of piety above can be represented as a mere list of names in no

---

<sup>120</sup> Translated by G.M.A. Grube (Plato 5)

particular order<sup>121</sup> – here, taking ‘name’ in the broad Platonic sense (see Section 2.2.2.1, pg. 114):

**τὸ ὄσιον** (piety):

ἀδικοῦντι

φόνους

ἱερῶν

etc.

Within the definition of piety, each name serves as a part of a λόγος – i.e., each name is part of the definition as a whole. But outside of the definition, as shown in the list above, these names do not form a coherent whole. More specifically, the names are not placed in a logical structure – i.e., how the “parts” of the definition relate to each other is not indicated by a mere list of names. In other words, the list is structureless. That a mere list of names cannot constitute coherent speech or thought is expressed by the Stranger in the *Sophist* as follows:

ΞΕ. Οὐκοῦν ἐξ ὀνομάτων μὲν μόνων συνεχῶς λεγομένων οὐκ ἔστι ποτὲ λόγος, οὐδ’ αὖ ῥημάτων χωρὶς ὀνομάτων (10) λεχθέντων. (262a9-11)

Stranger: So no discourse is formed just from names spoken in a row, and also not from verbs that are spoken

---

<sup>121</sup> Such a list occurs at *Theaetetus* 207a, where the parts of a wagon are simply listed as “wheels, axle, body, rims, yoke.” Since the relations between the parts in the list are not specified, the list is structureless; i.e., it does not define a whole.

without names.<sup>122</sup>

To use an example provided by the Stranger, the expression ‘lion stag horse’ (‘λέων ἔλαφος ἵππος’; *Sophist* 262b9-10), as a mere list of names, is not coherent discourse (λόγος). Thus, in respect to collection and division, it is only when named parts are brought together into a coherent definition, i.e., when their interrelations are defined, that a structure is formed.

Euthyphro’s formulation of the definition of piety is a form of logical reasoning because the structure that results when named parts are brought into a coherent whole, as in the definition of piety above, is the endpoint of thinking about the individual parts of a whole. As such, it agrees with the definition of logic given in Section 1.5.3: logic is thinking that reaches an endpoint. Here, the naming and placement of each part, while not explicitly stated, constitutes a series of steps that leads to the final step, the articulation of the whole and its parts (see Section 2.2, pg. 98). To reiterate, the steps are *not* explicitly stated in the definition of piety quoted above, but steps of this sort must precede the formulation of any coherent definition, just as steps that occur when a word is spelled letter-by-letter, or when a sentence is composed word-by-word, must precede the formulation of the word or sentence.

This chapter will argue that even a simple definition such as *piety is a kind of prosecution* or *love is a kind of madness*, where no extended hierarchy of genus-species relations is defined, is also a framework – i.e., it is a set of overlapping concepts that serve as the basis for reasoning about the parts of a whole and the whole itself. Even a definition that apparently lacks a logical structure, such as Meno's definition of virtue,

---

<sup>122</sup> Translated after Nicholas P. White (Plato 285), with modifications

can be understood as a kind of “loose structure” that is the result of an incomplete application of collection and division. Even in cases such as this, collection and division underlie the formulation of the definition. Finally, Euthyphro’s definition shows that collection and division apply to reasoning about individuals as well as universals. This shows how extensive collection and division are in the dialogues, and it adds weight to the claim that collection and division have a very wide scope. Thus, the passages from the *Meno* and the *Euthyphro* discussed below are counter-examples to the claim that collection and division are restricted to the definition of genus-species trees and to deductive reasoning.

### 5.3 The Meno

At 71d in the *Meno*, Socrates asks Meno to define virtue (ἀρετή). Meno’s response is as follows:

(e) MEN. Ἄλλ’ οὐ χαλεπὸν, ὦ Σώκρατες, εἰπεῖν. πρῶτον μὲν, εἰ βούλει ἀνδρὸς ἀρετή, ῥάδιον, ὅτι αὕτη ἐστὶν ἀνδρὸς ἀρετή, ἱκανὸν εἶναι τὰ τῆς πόλεως πράττειν, καὶ πράττοντα τοὺς μὲν φίλους εὖ ποιεῖν, τοὺς δ’ ἐχθροὺς κακῶς, καὶ αὐτὸν εὐλαβεῖσθαι μηδὲν τοιοῦτον παθεῖν. εἰ δὲ βούλει γυναικὸς (5) ἀρετὴν, οὐ χαλεπὸν διελθεῖν, ὅτι δεῖ αὐτὴν τὴν οἰκίαν εὖ οἰκεῖν, σφύζουσάν τε τὰ ἔνδον καὶ κατήκοον οὔσαν τοῦ ἀνδρός. καὶ ἄλλη ἐστὶν παιδὸς ἀρετή, καὶ θηλείας καὶ ἄρρενος, καὶ πρεσβυτέρου ἀνδρός, εἰ μὲν βούλει, ἐλευθέρου, εἰ δὲ βούλει, 72(a) δούλου. καὶ ἄλλαι ἀμπολλαι ἀρεταὶ εἰσιν, ὥστε οὐκ ἀπορία εἰπεῖν ἀρετῆς περὶ ὅτι ἐστίν· καθ’ ἐκάστην γὰρ τῶν πράξεων καὶ τῶν ἡλικιῶν πρὸς ἕκαστον ἔργον ἐκάστῳ ἡμῶν ἡ ἀρετή ἐστίν, ὡσαύτως δὲ οἶμαι, ὦ Σώκρατες, καὶ ἡ κακία. (71e1 - 72a5)

Meno: It is not hard to tell you, Socrates. First, if you want the virtue of a man, it is easy to say that a man’s virtue consists of being able to

manage public affairs and in so doing to benefit his friends and harm his enemies and to be careful that no harm comes to himself; if you want the virtue of a woman, it is not difficult to describe: she must manage the home well, preserve its possessions, and be submissive to her husband; the virtue of a child, whether male or female, is different again, and so is that of an elderly man, if you want that, or if you want that of a free man or a slave. And there are very many other virtues, so that one is not at a loss to say what virtue is. There is virtue for every action and every age, for every task of ours and every one of us – and, Socrates, the same is true for wickedness.<sup>123</sup>

At 72a Socrates complains that Meno's description of virtue resembles a "swarm"

(σμήνος) : “Πολλῆ γέ τιτι εὐτυχία ἔοικα κεχρη̃σθαι, ὧ̃ Μένων, εἰ μίαν ζητῶν ἀρετὴν σμήνος τι ἀνηύρηκα ἀρετῶν παρὰ σοὶ κείμενον.” (“I seem to be in great luck, Meno; while I am looking for one virtue, I have found you to have a whole swarm of them.”<sup>124</sup>)

He refers to the swarm as an εἰκὼν (image; 72a), and according to Socrates this image can be used to identify the problems that undermine Meno's description of virtue.

Below, Meno's definition of virtue will serve as a representative example of non-deductive reasoning. It will be argued in Section 5.3.1 that Meno's definition is unrelated to collection and division; i.e., the differences between non-deductive reasoning and collection and division outweigh whatever similarities, if any, the two may have. Section 5.3.2 will defend the opposite claim: Meno's definition of virtue only appears to be far removed from collection and division, but on further consideration, it will be argued, the appearances are deceiving.

---

<sup>123</sup> Translated by G.M.A. Grube (Plato 872)

<sup>124</sup> Translated by G.M.A. Grube (Plato 872)



### 5.3.1 Hypothesis: Meno's definition of virtue does not derive from collection and division

This section will take the standpoint of arguing *against* the hypothesis that collection and division are the basis of non-deductive reasoning. Instead it will argue the opposite: collection and division and non-deductive reasoning are so different that they have nothing of significance in common. The point of this exercise is to highlight ways (some obvious, some not) in which Meno's definition of virtue does not appear to be associated with collection and division. After all, one could argue that collection and division are to be found only where Plato explicitly illustrates the method. The remainder of this section elaborates this argument for the purpose of clarifying and strengthening the opposing argument that will be defended in Section 5.3.2.

Meno's description of virtue resembles the "scattered many" of the *Phaedrus* (265d; see Section 1.2.1). It lacks shape and coherence; Meno's description seemingly has some amount of consistency, but it is only a nominal consistency; what binds the elements of the list together is not a core meaning of virtue but merely the name 'ἀρετή' (virtue). In short, there is no ordering. No interrelations are defined between the items of Meno's list; e.g., how does the virtue of man relate to the virtue of woman, and how do these relate to the virtue of the young and old?

It is true that there are definitions included in Meno's description of virtue. For example, Meno defines the virtue of man as the ability to manage public affairs (71e). This gives us some idea of what unifies virtue, but this is immediately followed by a different picture of virtue: for women, virtue is to manage the home well, among other

things (71e). *If* there is a thread that binds these two definitions, it is not evident.

Socrates' image of the swarm is an adequate parallel: to the extent that a swarm lacks order and structure, so does Meno's description of virtue. In fact, Meno emphasizes that there is no common thread, even if one searches for one: he emphasizes that there is a virtue for each one of us – as if virtue could be chopped up and spread out among numberless individuals and actions. Not only this, but each age (ἡλικία) has its own virtue; so virtue is in flux – there is not even a consistency across the ages, let alone across individuals. This brings to mind the Heraclitean relativism as portrayed in the *Theaetetus*: nothing is stable, things are constantly in motion (160d). Meno is implying that it is impossible to pin virtue down, impossible to define it, and this is contrary to the purpose of collection and division. In addition, Meno's list of virtues, like the parts of a swarm, lacks number; we know only that it is plural. If virtue were “one,” Meno's description would be a coherent, unified form of reasoning, a definition. Similarly, if Meno had provided a number of kinds or aspects of virtue – even a relatively large number – he would have been on the road to a definition.

In general, Meno's reasoning is fragmented; it does not present the picture of a coherent whole. Later in the dialogue, Socrates states the following:

...ὅτι ἐμοῦ δεηθέντος ὅλον  
εἰπεῖν τὴν ἀρετὴν, αὐτὴν μὲν πολλοῦ δεῖς εἰπεῖν ὅτι ἐστίν,  
πᾶσαν δὲ φησὶ πρᾶξιν ἀρετὴν εἶναι, ἐάνπερ μετὰ μορίου  
(c) ἀρετῆς πράττεται, ὥσπερ εἰρηκῶς ὅτι ἀρετὴ ἐστὶν τὸ ὅλον  
καὶ ἤδη γνωστομένου ἐμοῦ, καὶ ἐὰν σὺ κατακερματίζης αὐτὴν  
κατὰ μόρια (79b7-79c3).

...when I begged  
you to tell me about virtue as a whole, you are far from telling me what  
it is. Rather, you say that every action is virtue if it is performed with a  
part of virtue, as if you had said what virtue is as a whole, so I would

already know that, even if you fragment it into parts.<sup>125</sup>

Socrates is referring to a later definition provided by Meno (virtue is the power of securing goods; 78b), but his observation sums up the general problem well. The purpose of collection and division is to instruct and clarify, yet Meno's reasoning lacks cohesion to the point of being fractured and discordant. It exemplifies the idea of crumbling something into small pieces rather than dividing a whole along natural joints. In contrast to Meno's description of virtue, when Socrates had applied collection and division to define love and madness in the *Phaedrus*, he enumerated and named four kinds of divine madness (Section 1.2.1, pg. 21). Enumeration and naming yield structure and clarity, but these are lacking in Meno's account.

To conclude this argument, Meno's reasoning appears to be a far cry from the method of collection and division, which may not yield a proven conclusion but at least brings clarity and consistency through definition (*Phaedrus* 265d). In short, instead of a structured whole, Meno gives us a jumble of names painting a random, incoherent picture, or in modern terms "a heap of broken images" (Eliot 61). Far from being a form of collection and division, in many ways it is what collection and division oppose. Collection and division and Meno's reasoning differ to such an extent that they are entirely different kinds of reasoning.

### **5.3.2 Hypothesis: Meno's definition of virtue derives from collection and division**

---

<sup>125</sup> Translated by G.M.A. Grube (Plato 878)

The preceding section presented an argument for the purpose of setting the stage for the following counter-argument. In this section, it will be argued that Meno's definition of virtue only appears to be far removed from collection and division, but on further consideration, this is not the case: there are several reasons for concluding that Meno's reasoning ultimately derives from collection and division.

Arguably, Meno's "swarm" represents the first steps of collection. Under some interpretations, it is simply a list that can serve as the starting point for reflection and argumentation that will ultimately lead to a definition. In her article, "Division and Definition in Plato's *Sophist* and *Statesman*," M.L. Gill notes the following:

Collection without division often occurs in the Socratic dialogues, at the start of an investigation. When Socrates asks 'What is X?' the interlocutor often initially gives some sort of list—e.g. *Euth.* 5d8–e2; *Meno* 71e1–72a5; *Tht.* 146c7–d3. Socrates always objects to the list and insists that he wants to know what all the items have in common, what it is that makes them all examples of one kind. Although Socrates objects, the list is very important in getting the investigation started, because reflection on the items enumerated can help one recognize the common character they share (198).

However, it will be argued below that Meno's definition is more than a list. While it is not a fully-developed framework that delineates each kind of virtue, it occupies an intermediate area between a list of names and a fully-structured collection or logical whole.

There are two reasons why Meno's definition of virtue should not be considered as simply an unstructured list or, as argued in the preceding section, as merely an incoherent and disjointed collection of concepts and images. First, Meno provides two definitions, one for man and one for woman (71e). These are expressed in general terms (e.g., "ικανὸν εἶναι τὰ τῆς πόλεως πράττειν" – "being able to manage public affairs") that

indicate the scope and meaning behind the name ‘ἀρετή.’ While these may not be *consistent* definitions, they are a step above and beyond merely listing instances of virtue. Treating virtue as a whole, at least *some* parts of virtue are specified by these definitions.

Second, Meno’s definition of virtue indicates a common thread, the idea of the human, that binds the items of the list into a whole. More specifically, his definition presents a consistently human picture of virtue, as opposed to a list of abstract concepts or a mixture of abstract and concrete. His examples of different kinds of virtue, those of man, woman, child, elderly man, etc., are all human examples. Although it is not spelled out, there is at least an unstated connection between virtue and the human. Meno could have presented a completely scattered account of virtue, listing the virtue of numbers, say, side-by-side with the virtues of gods as well as humans, and the virtues of different kinds of knowledge. In response to this claim, it can be argued that the initial question posed at the start of the dialogue, whether virtue is teachable (70a), already implies that virtue is related to the human. But this is not the case – if there were virtues of numbers, let’s say, Meno could still argue that such virtues are or are not teachable – in other words, Meno did *not* have to restrict the scope of his definition to the human in order to answer Socrates’ question. But even *if* the concept of the human is already implicit in Socrates’ question, what does this prove? Only that Meno, like Socrates, was reasoning about a certain kind of virtue – i.e., the human kind. He *could* have replied that ‘virtue’ applies to everything, not just the human, but he did not. Thus, Meno’s definition is wide in scope, spanning all ages and activities, yet it is restricted to the sphere of the human. In short, there is a kind of loose structure – an outline of a whole – in Meno’s definition that extends beyond the appellation ‘virtue.’

In addition, Meno is not dogmatic; he is willing to revise his account of virtue. This resembles the practice seen in the *Sophist* and *Statesman*, where definitions are revised several times during collection and division. In fact, Meno presents at least six definitions of virtue in response to Socrates' criticisms in the first part of the dialogue (73d, 74a, 77b, 78c, and 79a). Moreover, as a whole the definitions re-affirm the connection between virtue and the human. To reiterate the first point, Meno did not slip into a realm of abstraction or some strange Pythagorean mode in which the virtue of number is grouped together with the virtue of man, for example. Finally, Meno's use of exemplars to paint a vivid picture of an abstract idea resembles collection and division as seen in the *Sophist* and the *Statesman*. The figures of the elderly man and the slave, the householder and child, come to mind when reflecting on Meno's examples. This is not unlike the summoning of exemplars in the *Statesman*, for example, where representative individuals and activities such as the architect and householder, and arithmetic and carpentry, are used to illustrate the initial divisions that eventually yield a definition (258d-259e).

In these ways Meno gives us a partial and questionable image of virtue, but it is also a representative image: it uses the idea of the human to illustrate a key aspect of virtue. As such it is more than a mere list of names or concepts completely lacking in structure or consistency. On the other hand, it is not a fully-developed image; it only approximates the precision of the classificatory scheme of madness that is described in the *Phaedrus*, for example. Thus, instead of naming each kind of virtue, Meno names only some of them: he indicates that virtue overlaps with other concepts: those of man, woman, slavery, freedom, etc. But the vast majority of "virtues" remain unnamed, and

their relations, if any, to the virtues of man, woman, etc. are unstated. The parts of virtue and their interrelations (i.e., their arrangement or placement within a logical structure) is only hinted at. To borrow an analogy from one of the models of collection and division discussed in Chapter 3, Meno's picture of virtue is like a fabric that is only partially woven; i.e., it is a loosely-defined structure that at least serves as the starting point for inquiry and argument. It will be argued in Section 5.5 below that Meno's definition is the result of an incomplete application of the three operations of collection and division that were defined in Chapter 2.

#### 5.4 The *Euthyphro*

At the beginning of the dialogue, Socrates, facing a charge by Meletus, encounters Euthyphro near the king-archon's court (2a). Euthyphro explains that he is prosecuting his father for murder. His story is as follows:

...ἐπεὶ ὁ γε ἀποθανὼν πελάτης  
 τις ἦν ἐμός, καὶ ὡς ἐγεωργοῦμεν ἐν τῇ Νάξῳ, ἐθήτευσεν  
 ἐκεῖ παρ' ἡμῖν. παροινήσας οὖν καὶ ὀργισθεὶς τῶν οἰκετῶν (5)  
 τινι τῶν ἡμετέρων ἀποσφάττει αὐτόν. ὁ οὖν πατήρ συνδή-  
 σας τοὺς πόδας καὶ τὰς χεῖρας αὐτοῦ, καταβαλὼν εἰς τάφρον  
 τινά, πέμπει δεῦρο ἄνδρα πευσόμενον τοῦ ἐξηγητοῦ ὅτι χρεῖη  
 (d) ποιεῖν. ἐν δὲ τούτῳ τῷ χρόνῳ τοῦ δεδεμένου ὀλιγώρει τε  
 καὶ ἡμέλει ὡς ἀνδροφόνου καὶ οὐδὲν ὄν πρᾶγμα εἰ καὶ ἀπο-  
 θάνοι, ὅπερ οὖν καὶ ἔπαθεν· ὑπὸ γὰρ λιμοῦ καὶ ῥίγους καὶ  
 τῶν δεσμῶν ἀποθνήσκει πρὶν τὸν ἄγγελον παρὰ τοῦ ἐξηγη-  
 τοῦ ἀφικέσθαι. (4c3-4d5)

The victim was a dependent of mine, and when we were farming in Naxos he was a servant of ours. He killed one of our household slaves in drunken anger, so my father bound him hand and foot and threw him in a ditch, then sent a man here to inquire from the priest what should be done. During that time he gave no thought or care to the bound man,

as being a killer, and it was no matter if he died, which he did. Hunger and cold and his bonds caused his death before the messenger came back from the seer.<sup>126</sup>

At Socrates' prompting, Euthyphro provides a definition of piety:

ΣΩ. Λέγε δὴ, τί φησ εἶναι τὸ ὅσιον καὶ τί τὸ ἀνόσιον;

ΕΥΘ. Λέγω τοίνυν ὅτι τὸ μὲν ὅσιόν ἐστιν ὅπερ ἐγὼ νῦν ποιῶ, τῷ ἀδικοῦντι ἢ περὶ φόνους ἢ περὶ ἱερῶν κλοπᾶς ἢ τι ἄλλο τῶν τοιούτων ἐξαμαρτάνοντι ἐπεξιέναι, ἐάντε πατήρ (10) (ε) ὢν τυγχάνῃ ἐάντε μήτηρ ἐάντε ἄλλος ὅστισοῦν, τὸ δὲ μὴ ἐπεξιέναι ἀνόσιον· ἐπεὶ, ὦ Σώκρατες, θέασαι ὡς μέγα σοι ἐρῶ τεκμήριον τοῦ νόμου ὅτι οὕτως ἔχει—ὃ καὶ ἄλλοις ἤδη εἶπον, ὅτι ταῦτα ὀρθῶς ἂν εἶη οὕτω γινόμενα—μὴ ἐπιτρέπειν τῷ ἀσεβοῦντι μηδ' ἂν ὅστισοῦν τυγχάνῃ ὢν. αὐτοὶ γὰρ οἱ ἄνθρωποι τυγχάνουσι νομίζοντες τὸν Δία τῶν θεῶν ἄριστον καὶ δικαιοτάτον, β(α) καὶ τοῦτον ὁμολογοῦσι τὸν αὐτοῦ πατέρα δῆσαι ὅτι τοὺς υἱεὶς κατέπινεν οὐκ ἐν δίκῃ, κάκεινόν γε αὖ τὸν αὐτοῦ πατέρα ἐκτεμεῖν δι' ἕτερα τοιαῦτα. (5d7-6a3)

Socrates: Tell me then, what is the pious, and what the impious, do you say?

Euthyphro: I say that the pious is to do what I am doing now, to prosecute the wrongdoer, be it about murder or temple robbery or anything else, whether the wrongdoer is your father or your mother or anyone else; not to prosecute is impious. And observe, Socrates, that I can cite powerful evidence that the law is so. I have already said to others that such actions are right, not to favor the ungodly, whoever they are. These people themselves believe that Zeus is the best and most just of the gods, yet they agree that he bound his father because he unjustly swallowed his sons, and that he in turn castrated his father for similar reasons.<sup>127</sup>

Euthyphro also remarks that his father and other relatives are angry because they believe that it is impious for a son to prosecute his father for murder, especially in this case since the victim was himself a killer (4d). But Euthyphro claims that their ideas of the divine attitude to piety and impiety are mistaken: “For, they say, it is impious for a son to

<sup>126</sup> Translated by G.M.A. Grube (Plato 4)

<sup>127</sup> Translated by G.M.A. Grube (Plato 5)



prosecute his father for murder. But their ideas of the divine attitude to piety and impiety are wrong, Socrates.”<sup>128</sup> (“ἀνόσιον γὰρ εἶναι τὸ ὑὸν πατρὶ φόνου ἐπεξιέναι—κακῶς εἰδότες, ὃ Σώκρατες, τὸ θεῖον ὡς ἔχει τοῦ ὀσίου τε πέρι καὶ τοῦ ἀνοσίου.”; 4e).

Below, Euthyphro’s definition of piety will serve as a representative example of non-deductive reasoning. This definition was chosen because Euthyphro, like Meno, is not a philosopher, nor is he a specialist in practicing collection and division as a specific procedure, as the Eleatic Stranger is in the *Sophist* and the *Statesman*. Rather, he formulates his definition in the midst of a conversation. As such, it is a suitable example for explaining how collection and division allow one “to speak and to think” (see Section 1.6.3) without the application of a specific procedure. However, first it will be argued in Section 5.4.1 that Euthyphro’s definition is unrelated to collection and division. This will set the stage for the opposing argument presented in Section 5.4.2: Euthyphro’s definition of piety only appears to be far removed from collection and division, but on further consideration, it will be argued, this is not the case.

#### **5.4.1 Hypothesis: Euthyphro’s definition of piety does not derive from collection and division**

At 5d-e Euthyphro is formulating a definition of piety, but for several reasons it is essentially different from collection and division. First, Euthyphro’s definition of piety emphasizes the particular over the general. The first part of his definition, “the pious is to do what I am doing now” (“τὸ μὲν ὀσίον ἐστὶν ὅπερ ἐγὼ νῦν ποιῶ”) shows that

---

<sup>128</sup> Translated by G.M.A. Grube (Plato 4)

Euthyphro defines piety in terms of his own actions – it is as if the general statement that follows (“to prosecute the wrongdoer”) was an afterthought. Thus, Euthyphro’s definition of piety indicates tunnel-vision: the particular details of his own situation, the here and now, limit and shape his understanding of the general concepts involved. Euthyphro did not set out to define piety and then state his definition; rather, he is answering a question posed by Socrates. This is a far cry from the elaborate step-by-step procedure carried out by the Eleatic Stranger in the *Sophist* and the *Statesman*.

Furthermore, Euthyphro’s definition of piety is vague and unstructured. It leaves open the question of what wrongdoing is: there is no attempt to divide wrongdoing or piety into sub-kinds or species. We are left in the dark as to whether temple robbery and murder belong to the same species of wrongdoing, and we have no indication of the number of kinds of wrongdoing. What piety *is*, precisely – i.e., what particular kinds of wrongdoing it involves – is not specified. Thus, the “parts” of piety and wrongdoing remain unstated, and so it appears that Euthyphro’s brief remark on piety is not a logical framework.

In short, Euthyphro’s definition of piety has very little, if anything, to do with collection and division. None of the familiar steps of collection take place: instead we are led from a very specific case – the details of his father’s crime and Euthyphro’s decision to prosecute – to a generalized claim supported only by authority, in this case the examples of Zeus and Cronus. Nor is there any division into kinds or aspects: instead of the names and number of kinds or aspects of piety, we are given a story about a particular crime. No logical structure is formulated or investigated; instead, Euthyphro simply

relates his observations on his own experience, going no further than drawing a parallel with the gods.

#### **5.4.2 Hypothesis: Euthyphro's definition of piety derives from collection and division**

Like Meno's definition of virtue, Euthyphro's initial statement concerning piety – “the pious is to do what I am doing now, to prosecute the wrongdoer” – is general enough to serve as a definition in the sense that it indicates the scope of piety. More specifically, Euthyphro's statement is not restricted to his particular actions – it is a claim about piety in general. In addition, Euthyphro distinguishes piety from the impious (5e). Whether true or false, Euthyphro's definition expresses a division between two contraries, and both are defined in terms of their relations to two other concepts, prosecution and wrongdoing.

Commentators have expressed differing interpretations as to whether Euthyphro's statement amounts to a definition. Taylor remarks that “Like so many of the interlocutors in these early dialogues of Plato, Euthyphro at first confuses definition with the enumeration of examples. ‘Religious duty’ is to proceed against the party guilty of an offence against religion, whether it be a homicide or a sacrilegious theft, or any other such crime ...” (149). Even if this were the case, Geach argues that examples can be more informative than formal definitions: “We know heaps of things without being able to define the terms in which we express our knowledge. Formal definitions are only one way of elucidating terms; a set of examples may in a given case be more useful than a

formal definition” (371). But regardless of whether examples can be more useful than a formal definition, others have a different point of view: Euthyphro is not only providing examples of piety, he is also defining it. Thus, Hoerber argues that “by defining piety as prosecuting the guilty, [Euthyphro] does not mean merely ‘do what I am doing’ (although Socrates interprets the definition thus at 6d), but his intent is rather ‘follow the law’ (5e3) ... Euthyphro, by prosecuting his father, is following the law, the highest human authority” (101). Under this interpretation, Euthyphro is not only enumerating examples but making a general claim about piety. Moreover, some commentators argue that Euthyphro is defining a class; Gomperz states that “In reply to the question – What is pious, and what impious? Euthyphro at first merely refers to the class of instances to which his own action belongs. It is pious, he says, to accuse evil-doers, and, in so doing, to spare neither father nor mother nor any one else” (359).

On the other hand, as argued in the previous section, under some interpretations Euthyphro’s definition of piety can be dismissed as a simple appeal to authority; i.e., instead of reasoning his way to a definition through an understanding of the nature of piety, Euthyphro conjures religious figures to justify his actions. But behind Euthyphro’s seemingly simplistic reasoning is a set of parallels that serve to illustrate his definition: the relation between Cronus and his father Uranus parallels the relation between Zeus and his father Cronus; and these in turn, according to Euthyphro, parallel the relation between Euthyphro and his father. The common thread that runs through each father-son relation according to this argument is the prosecution of wrongdoing; in each case the image of a son prosecuting his guilty father serves as a representation of piety, according to Euthyphro. Just as figurative exemplars such as the householder and the architect are

used to illustrate the reasoning behind a division in the *Statesman* (Section 5.3.2, pg. 250), here Euthyphro is reasoning along the same lines: individual gods and humans serve as examples to clarify a general idea and to distinguish it from other concepts.

The parallel between the divine and the human is also seen when collection and division are introduced in the *Phaedrus*: the human is the “left-hand” of madness, the divine is the “right hand” (266a). At *Phaedrus* 265b, Socrates’ summary of the results of collection and division is as follows:

ΣΩ. Τῆς δὲ θείας τεττάρων θεῶν τέτταρα μέρη διελόμενοι, μαντικὴν μὲν ἐπίπνοιαν Ἀπόλλωνος θέντες, Διονύσου δὲ τελεστικὴν, Μουσῶν δ’ αὖ ποιητικὴν, τετάρτην δὲ Ἀφροδίτης καὶ Ἔρωτος, ἐρωτικὴν μανίαν ἐφήσαμεν τε ἀρίστην εἶναι, (5) καὶ οὐκ οἶδ’ ὅπη τὸ ἐρωτικὸν πάθος ἀπεικάζοντες, ἴσως μὲν ἀληθοῦς τινος ἐφαπτόμενοι, τάχα δ’ ἂν καὶ ἄλλοσε παραφερόμενοι... (265b2-8)

Socrates: We also distinguished four parts within the divine kind and ascribed them to four gods. Having attributed the inspiration of the prophet to Apollo, of the mystic to Dionysus, of the poet to the Muses, and the fourth part of madness to Aphrodite and to Love, we said that the madness of love is the best. We expressed the passion of love figuratively; perhaps it had a measure of truth in it, though it may also have led us astray.<sup>129</sup>

Thus, Socrates admits that *some* truth was expressed by collection and division – the definition of love is partial, yet, just as in Euthyphro’s case, it presents at least a general picture or image of what is being defined. Here, the Greek word for “figuratively” is ‘ἀπεικάζοντες,’ the participle form of ‘ἀπεικάζω,’ which means “liken, compare with” or “to form from a model”<sup>130</sup> (Liddell and Scott 182). Socrates likens divine madness to the

<sup>129</sup> Translated after A. Nehamas and P. Woodruff (Plato 542), with modifications.

<sup>130</sup> Ast lists ‘assimilo’ and ‘comparo’ as the meanings of this word (215), and cites its occurrence throughout the dialogues, including passages in which the word is used to compare parts of a whole that is

four gods, and Euthyphro reasons similarly when he likens his actions to those of Zeus and Cronus. While on the one hand Socrates emphasizes the differences between human and divine madness, and on the other Euthyphro emphasizes the similarities between human and divine piety, the general form of reasoning is the same: one concept is illustrated with human and divine analogues. More generally, the concepts of *divine* and *human* overlap both *piety* and *madness*.

As discussed in Section 3.2.2 (pg. 162), commentators such as Moravcsik argue that Plato did not consider division to produce a definition in the usual sense of the word. Instead of specifying a singular statement of essential properties, the method yields one of many possible “characterizations” that individuate the concept being defined. Both Socrates’ division of madness in the *Phaedrus* and Euthyphro’s definition of piety can be understood as characterizations in this sense. This is not to say that either characterization is correct, only that the reasoning that is used to arrive at a characterization, even a tentative one, is driven at least implicitly by collection and division. In Euthyphro’s case, Socrates has good reason for criticizing Euthyphro’s definition of piety.<sup>131</sup> However, the key point is that Socrates at least has something to argue against: by using the analogies of Zeus and Cronus to illustrate the concept of piety, Euthyphro presents a background picture of human and divine families that specifies the conceptual relations between piety, prosecution, and wrongdoing. This is not to say that the picture is fully coherent or consistent, nor is it a complete division with each part fully articulated; rather, in the

---

divided (e.g. at *Statesman* 267a).

<sup>131</sup> Even this is questionable, however: Geach argues that Socrates’ criticism amounts to an *ad hominem* argument and an appeal to class prejudices (375).

background of his reasoning is a basic logical structure that presupposes a rudimentary form of collection and division.

More specifically, each of the two families described by Euthyphro – the divine lineage of Uranus, Cronus, and Zeus on the one hand, and the human lineage comprising Euthyphro and his father on the other – can be understood as a whole of parts. Under one sense of the word, each lineage is a “γένος” – a collection of individuals that forms a unity.

This sense of the term ‘γένος’ – i.e., ‘γένος’ as *lineage* – is recognized by Aristotle as well as Plato. In his observations on *Metaphysics* Δ.28, Pierre Pellegrin summarizes two senses of the term as follows:

In the catalogue of the different senses of *genos* given in *Metaphysics* Δ.28, the first to be mentioned makes of *genos* ‘the uninterrupted generation (*genesis*) of beings having the same *eidōs*’, which is to say that the *genos* is the locus of conservation of this *eidōs* in time through the course of generations ... the second sense given to *genos* by this passage [is] that of a *collection* of individuals descended from the same progenitor, i.e. the same male ... The *genos* is thus fundamentally a *patri-lineage*, a ‘genetic space’ of transmission of a kinship as well as a collection of individuals bound together by participation in the *eidōs* of an ancestral male founder... (319)

Thus, under this reading, the individual of a collection (i.e., each member of a lineage) participates in the *eidōs* (εἶδος) not of a universal, but that of an individual, the ancestral male founder. Reasoning about individuals and reasoning about universals both involve reasoning about structures of wholes and parts. Collection and division are essentially about defining wholes and parts, no matter what kind of whole is being considered – thus, a lineage can be divided into individuals, or a kind can be divided into sub-kinds.

In Plato, ‘γένος’ is used to refer to tribes, families and lineages as well as to kinds. The latter sense is often seen in the midst of a series of divisions; e.g. at 260d, 260e, and

263c in the *Statesman*. The former use is seen throughout the dialogues; e.g. *Phaedrus* 246d refers to “τῶν θεῶν γένος” (“the race of the gods”) while other dialogues refer to races and lineages of men (e.g. *Cratylus* 397e, *Critias* 109d, *Republic* 368a).<sup>132</sup> The following passage from the *Cratylus* is especially relevant since it makes the distinction between the two senses of the word in relation to the concept of piety:

ΣΩ. Τί δὲ τοῖς παρὰ φύσιν, οἳ ἂν ἐν τέρατος εἶδει (5)  
 γένωνται; οἷον ὅταν ἐξ ἀνδρὸς ἀγαθοῦ καὶ θεοσεβοῦς  
 ἀσεβῆς γένηται, ἄρ’ οὐχ ὥσπερ ἐν τοῖς ἔμπροσθεν, κἂν  
 ἵππος βοῶς ἔκγονον τέκη, οὐ τοῦ τεκόντος δῆπου ἔδει τὴν  
 ἐπωνυμίαν ἔχειν, ἀλλὰ τοῦ γένους οὗ εἶη;

EPM. Πάνυ γε. (10)

(e) ΣΩ. Καὶ τῷ ἐκ τοῦ εὐσεβοῦς ἄρα γενομένῳ ἀσεβεῖ τὸ  
 τοῦ γένους ὄνομα ἀποδοτέον. (394d5-394e2)

Socrates: What about the ones that are born contrary to nature, those that are some form of monster? For instance, when a good and pious man has an impious son, the latter shouldn’t have his father’s name but that of the kind to which he belongs, just as in our earlier example of a horse having a calf as offspring?

Hermogenes: Yes

Socrates: Therefore the impious son of a pious father should be given the name of the kind to which he belongs.<sup>133</sup>

Here, Socrates argues that “the name of the kind” (“τὸ τοῦ γένους ὄνομα”) ought to reflect not the parent’s name, but whether the son falls within the γένος of the pious or the impious. Euthyphro’s argument reflects this distinction, and his analogy between his actions and those of Zeus and Cronus works on two levels. First, there is the division between individuals – i.e., between father and son, a division which is paralleled in both the human and the divine families. Second, there is the conceptual division between the

<sup>132</sup> Ast lists a variety of meanings for ‘γένος’; in addition to *genus*, in the dialogues it also means *sexus*, *gens*, *stirps*, and *progenies* (381-82).

<sup>133</sup> Translated by G.M.A. Grube (Plato 113)



pious and the impious that is characterized by Euthyphro's definition of piety as prosecuting the guilty, and failing to do so as impiety. In both the *Cratylus* and the *Euthyphro*, the conceptual division between piety and impiety is contrasted with the relation between father and son – i.e., 'γένος' as a division of kinds is contrasted with 'γένος' as a patriarchal lineage in which members of the lineage are not sub-kinds but individuals.

In short, there are two undercurrents that shape Euthyphro's reasoning, both of which are based on whole-part relations. In one respect, Euthyphro reasons about individuals: Uranus, Cronus, Zeus, his own father and his own self. He also reasons about individual *families* or *lineages*: the lineage of Uranus on the one hand, and that of his father (or his ancestor) on the other. Second, Euthyphro also reasons in more general terms, i.e., in terms of concepts such as *prosecution*, *wrong-doing*, and *piety*. Thus, whole-part reasoning and collection and division apply not only to universals, but also to individuals. This claim reinforces the argument made in Section 1.6.3, that collection and division are wide in scope, and it also supports the argument that they are not restricted to defining genus-species trees (see Section 3.2.5). The relation between both forms of reasoning to structures of wholes and parts will be discussed in more detail below.

First, the divine and human lineages described by Euthyphro can be paralleled and compared with each other because they share in the same kind of whole-part relation, here treating each individual of a lineage as part of a whole; i.e., the parts of a whole in this case are not kinds, species, or aspects, but individuals: humans in one case, gods in another, but individuals nonetheless. Because the lineage of Uranus-Cronus-Zeus shares the same basic relational structure as the lineage of Euthyphro's father and Euthyphro,

Euthyphro can use the former as a model – i.e., as a representative image with which to compare his own actions. Thus, relations between individuals, not kinds or species, are used to understand and compare two wholes. Moreover, in Euthyphro’s reasoning each family or lineage is an individual. In one case, the individual family is that of which Uranus is the patriarch, in the other, the individual family is that of which Euthyphro’s father (or one of his ancestors) is the patriarch. Euthyphro’s reasoning incorporates individual fathers and sons and families as well as the more general concepts *father*, *son*, *prosecution*, etc.

Second, Euthyphro reasons in a more general way as well: he defines piety as a kind of prosecution. But even in this case, although he does not use whole-part terminology, he reasons in terms of wholes and parts. More specifically, since (according to his definition) piety is a kind of prosecution, piety is a part of prosecution. The difference here is that instead of reasoning about individual humans, gods, and families, he is reasoning about universals: Forms or concepts. Nonetheless, he reasons in terms of wholes and parts in both cases. In the first case – i.e., in the respect in which he reasons about individuals – he reasons about two families, one a collection of gods, one a collection of humans, but both are divided in terms of individual fathers and sons. In the second case – i.e., in the respect in which Euthyphro reasons about kinds or aspects – he divides prosecution into two kinds, the kind that is pious (i.e., the prosecution of wrongdoers) and the kind that is not. Thus, both senses of the term ‘γένος’ are operative in the background of Euthyphro’s reasoning and in both cases, the notion of a whole divided into parts underlies Euthyphro’s reasoning.

Collection and division that involve reasoning about both individuals and kinds is also seen in the *Phaedrus*, where Socrates divides madness in terms of individual gods on the one hand, and kinds of madness on the other (265b2-8, quoted above on pg. 260). Here, each individual god is associated with a specific kind. Moreover, the three operations of collection and division – *seeing*, *naming*, *placing* – apply to both individuals and kinds in Socrates' definition of love. On the one hand, the parts of divine madness are seen as individual gods and goddesses, they are given the names of individuals such as Aphrodite and Dionysus, and they are clearly placed in the same family on the right-hand side of madness. On the other hand, the parts of madness are also seen as kinds: the *prophetic*, the *mystic*, the *poetic*, and the *erotic*, each of them placed under the divine kind of madness. A similar form of reasoning is seen in Euthyphro's case: he sees that Zeus, for example, is not only an individual but also an individual who exhibits a kind of behavior, the prosecution of wrong-doing, the latter of which is named by Euthyphro as the pious.

## 5.5 Conclusion

The *Meno* and the *Euthyphro* are both interesting cases that shed light on what counts as a framework – i.e., what counts as a product of collection and division. According to one interpretation, collection and division produce elaborate logical structures. Moreover, a certain definite ordering and structure must be present. Under this reading, a simple statement like 'piety is a kind of prosecution' is not a product of collection and division. In addition, under this reading Meno's definition of virtue is not a

framework either, because it is too incoherent, too scattered and disorganized, to count as a logical structure. I argue that, on the contrary, collection and division are involved in both cases.

Meno's definition can be understood as an incomplete application of collection and division: parts of virtue – i.e., kinds and instances of virtue – are collected together, and they are unified by the concept of the human. In this sense, Meno brings together into a whole the “scattered many” (cf. Section 1.2.1) instances and kinds of virtue. But the whole is not clearly defined because only a fraction of the parts of virtue are enumerated and named (e.g., the virtue of man and woman), while most of its parts are only alluded to: the virtues for every age and individual remain nameless. These latter parts of virtue are not structured; i.e., they are not placed in a logical structure as, say, different kinds of madness are placed under divine or human kinds in the *Phaedrus*. So, while Meno can “see” that virtue has parts – i.e., there are different kinds and instances of virtue – he names only some of them, and their interrelations, if any, are unstated. In this respect, Meno's definition expresses only a partial application of the three operations of collection and division, *seeing*, *naming*, and *placing*. Thus, while there is a tenuous and unstated relation between Meno's reasoning on virtue and collection and division, there is a relation nonetheless: at least some parts are discerned and named, bringing Meno one step closer to a coherent definition.

The *Euthyphro* shows how whole-part reasoning applies to both universals and to individuals and collections thereof. On the one hand, a family can be seen as a structure which can be compared with another family of the same or a different kind. In Euthyphro's case, a human family is compared with a divine family, and a similarity is

found because each family exhibits pious behavior. On the other hand, families can also be seen as wholes that are divided into individual fathers, sons, mothers, daughters, etc. The latter form of reasoning, however, falls outside of the scope of the syllogistic: the genealogical relations of lineages are not transitive.<sup>134</sup> Thus, collection and division encompass and integrate reasoning about individuals and reasoning about universals, and they underlie forms of reasoning that are not encompassed by the syllogistic.

The purpose of arguing that Meno's definition of virtue and Euthyphro's definition of piety call out for logical frameworks is twofold: first, it adds support to the argument presented in Section 2.4, where it was argued that collection and division are not necessarily a skill-based procedure. Even Meno's and Euthyphro's formulations of piety and virtue involve collection and division despite the absence of a procedure as seen in the *Statesman* and the *Sophist*. Second, this chapter supports the argument that collection and division underlie non-deductive reasoning. Neither Meno nor Euthyphro were defining hierarchical logical structures, yet they were formulating conceptual frameworks nonetheless. These frameworks *could* have been developed much further – e.g., the concept of *prosecution* could be mapped out, much as *production* is mapped out in the *Sophist*. Also, each of the kinds of virtue that Meno describes (e.g., the virtue of man, the virtue of woman, etc.) can be explored and then tested through the method of elenchus or through some other means. But while these definitions serve as minimal or partial frameworks, they are frameworks nonetheless. In short, they are products of collection and division – they are the endpoints of reasoning about wholes and parts that, in turn, serve as starting-points for other lines of reasoning.

---

<sup>134</sup> For example, if x is the mother of y, and y is the mother of z, x is not the mother of z.

## Chapter 6

### Conclusion: summary and avenues for future research

#### 6.1 Introduction

The preceding chapters have raised some unanswered questions that, while not crucial to defending the thesis, point the way to possible future projects. A brief discussion of these questions will at least bring additional aspects of collection and division to light as well as indicate avenues for future research. The purpose of this chapter is twofold. First, it will summarize the key points and arguments of the preceding chapters. Second, it will discuss three interrelated questions that indicate possible future projects relevant to collection and division. While drawing on material introduced in the preceding chapters, these questions also bring into play aspects of Plato's thought that are just as much relevant to epistemology and metaphysics as they are to logic. The purpose of discussing these questions is not to present fully-developed arguments in favor of a particular point of view, but only to introduce problems that I believe are interesting and relevant to contemporary Platonic studies. These questions show how some of the conclusions of the preceding chapters can be used as starting points for future work. An outline of each section of this chapter is provided below.

Section 6.2 reiterates the central thesis introduced in Chapter 1 and summarizes the main arguments that were presented in the preceding chapters. Section 6.3.1 raises the question of how to evaluate the correctness of images. Since an image may or may not represent its object accurately, criteria are needed to determine whether an image is

truthful. A passage in the *Laws* does provide such criteria, but, as will be explained below, it raises the problem of Meno's paradox. In Section 6.3.2, a related problem will be presented: in the dialogues, belief and knowledge are sometimes represented as collections of individuals. According to one interpretation of the unlimited (ἄπειρον), not only organisms, but beliefs are subject to countless variations, making them subject to the same idiosyncrasies as organisms in a state of flux. Section 6.3.3 will further discuss material introduced in Section 2.2.1.3 (pg. 110), where the possibility of a further analysis of the operation of seeing was introduced. A passage in the *Parmenides* states that "the instant" (τὸ ἐξαίφνης) lies between the one and the many and the many and the one. One avenue for future inquiry is to consider the instant as a boundary between two steps of reasoning, and this approach may point the way to further analysis of the three operations of collection and division.

## 6.2 Summary

Collection and division define logical frameworks that underlie both deductive and non-deductive reasoning. As explained in Chapter 1, collection and division can be understood as *ways of reasoning* (Section 1.6.3, pg. 88). Moreover, the reasoning is logical in the sense that it is a stepwise process oriented toward a true conclusion (Section 1.5.3, pg. 74). This interpretation agrees with the image of collection and division as a road (ὁδός) and a method (μεθόδος).

Collection is reasoning about a scattered many – whether sensible or not – and "seeing" or "bringing together" the many into a unified, coherent whole (Section 2.2.1.2,

pg. 105). Division is the reverse of collection: instead of bringing many into one, it separates one into many. Division may or may not involve empirical observations, and it may or may not involve dividing into kinds. More specifically, a whole can comprise parts that are not species or sub-kinds of the whole. For example, Menn points out that mutes are not sub-kinds of sound (φωνή), although they are still “in” sound (295). In short, “Theuth is depicted, not as dividing speech into its kinds, but as discovering the ἀρχαί out of which speech is constituted” (Menn 294; see Section 1.5.3, pg. 74). Similarly, the high and low, fast and slow mentioned at *Philebus* 26a are not kinds or sub-kinds of sound, but aspects of sound that apply to multiple kinds of φωνή.

A logical framework is defined by means of collection and division through three operations: *seeing*, *naming*, and *placing*. Through *seeing*, one discerns similarities and differences between the parts of a conceptual whole. *Naming* articulates the scope of the parts that have been discerned. *Placing* defines interrelations between the parts, giving order and structure to the whole. These operations are not explicitly defined by Socrates and the Eleatic Stranger, instead, their use is illustrated, and this is precisely the point of naming the three operations: it makes evident a pattern that underlies collection and division as they are portrayed in the dialogues.

Each of the three operations can be understood as a part of an ordered process: (1) the parts of a whole are seen, (2) each part is named, and (3) the target is placed into a part, and the process is repeated. This is not the only reading of the three operations as an ordered process. As explained in Section 2.2.4 (pg. 129), other readings are viable. Arguably, each step of reasoning begins and ends with a name, i.e. the intervals of reasoning are demarcated by names that articulate wholes and parts. Even in this case,



however, seeing and placing play a role: at some point, parts must be discerned, and in some cases, nameless parts must be discovered. This is seen in the *Philebus*, where the letters of the alphabet were revealed by Theuth through collection and division. In addition, parts must be ordered into a whole; a mere list of named parts does not define a structure (Section 5.2, pg. 242).

Collection and division produce logical frameworks – i.e., structures defined through whole-part relations. A framework can serve as the basis of other forms of reasoning. For example, by defining hierarchical relations between the parts of a whole, a framework can serve as the basis of a syllogism. The syllogistic is based on proper-part relations, which are asymmetric and transitive. This is evident in Barbara, for example (see Section 4.4.3.3, pg. 219). However, collection and division can also define structures of non-hierarchical overlapping parts, as is often seen in dialogues such as the *Sophist* and the *Statesman* (see Section 4.4.3.4, pg. 225). But regardless of whether hierarchical or non-hierarchical structures are defined, a logical framework produced by collection and division can serve as the starting point for other lines of reasoning. A framework can be the target of elenchus, the subject of a myth, or serve as an image or representation to be revised or discarded (Section 2.2.4, pg. 129). As stated in Section 1.6 (pg. 83), collection and division can be a means by which one may inquire, discover, and learn.

When collection and division are successful, the resulting framework is a coherent picture that is more or less true of its subject – i.e., the parts of a whole and their relations are displayed accurately. As argued in Section 2.3 (pg. 134), when the method is employed to clarify and explain, it often aims to produce an image that represents the target being defined. This raises the question as to which criteria are to be used when

judging whether the result of collection and division is accurate. In Section 6.3.1 below, it will be argued that Plato provides three criteria for evaluating the truthfulness of an image. However, as will be explained below, even with these criteria Meno's paradox holds: i.e., it would seem that the object of a search needs to be known before the search is completed.

### 6.3 Avenues for future research

#### 6.3.1 Criteria for evaluating images

In Section 2.3.3, it was argued that like definitions, images are depictions that may or may not be truthful representations of the object being described. The danger of producing a misleading definition or image through collection and division is made evident as early as the *Phaedrus*: Socrates admits that his portrayal of madness may have led him astray (Section 2.2, pg. 98). As explained in Section 2.3.3 (pg. 141), Plato makes a distinction between two kinds of image, a likeness which is truthful and an appearance which is misleading. But how can we tell the two apart? For example, how do we know that the final definition of the *Sophist* is not an appearance as opposed to a likeness – i.e., how do we rule out the possibility that the final definition merely *seems* to be conclusive and truthful, but in reality is just another appearance? In short, how does one determine if an image or representation is accurate?

The dialogues provide criteria for determining the correctness of images. More specifically, a passage in the *Laws* states the following:

ΑΘ. Ὅρθότατα λέγεις. ἄρ' οὖν οὐ περὶ ἐκάστην εἰκόνα,

καὶ ἐν γραφικῇ καὶ ἐν μουσικῇ καὶ πάντῃ, τὸν μέλλοντα  
 ἔμφρονα κριτὴν ἔσεσθαι δεῖ ταῦτα τρία ἔχειν, ὃ τέ ἐστι  
 (b) πρῶτον γινώσκειν, ἔπειτα ὡς ὀρθῶς, ἔπειθ' ὡς εὖ, τὸ  
 τρίτον, εἴργασται τῶν εἰκόνων ἠτισοῦν ῥήμασί τε καὶ μέλεσι  
 καὶ τοῖς ῥυθμοῖς (669a7-669b3);

Athenian: You have hit the nail on the head. So anyone who is going to be a sensible judge of any image – in painting and music and every other field – should be able to assess three points: he must know, first, *what* has been represented; second, how *correctly* it has been copied; and then, third, the *moral value* of this or that representation produced by language, tunes and rhythms.<sup>135</sup>

While this passage gives us a general idea of how to proceed given a representation or image (εἰκόν) of an original, the problem becomes circular: if knowledge of what is being represented is required, and the method of collection and division is designed to give us knowledge of the original through a representation, how can one judge a representation until knowledge is achieved? It would seem that one must already know the original before one can successfully search for it using a representative image. This problem echoes Meno's paradox:

MEN. Καὶ τίνα τρόπον ζητήσεις, ὦ Σώκρατες, τοῦτο ὃ (5)  
 μὴ οἶσθα τὸ παράπαν ὅτι ἐστίν; ποῖον γὰρ ὧν οὐκ οἶσθα  
 προθέμενος ζητήσεις; ἢ εἰ καὶ ὅτι μάλιστα ἐντύχοις αὐτῷ,  
 πῶς εἴση ὅτι τοῦτό ἐστιν ὃ σὺ οὐκ ἤδησθα (80d5-8);

Meno: How will you look for it, Socrates, when you do not know at all what it is? How will you aim to search for something you do not know at all? If you should meet with it, how will you know that this is the thing that you did not know?<sup>136</sup>

Similarly, it would seem impossible to apply the criteria specified in the *Laws* unless one has already found what one is searching for: knowledge of the original above and beyond

<sup>135</sup> Translated after Trevor J. Saunders (Plato 1359-60), with modifications.

<sup>136</sup> Translated by G.M.A. Grube (Plato 880)

knowledge of its representation. This problem is related to that posed in the following section: if knowledge of the target being defined is not available during the search, it would seem that a definition can be revised without limit. This problem will be explained more fully below.

### 6.3.2 Belief, knowledge, and individuals

In the *Symposium*, the contents of the soul, including belief and knowledge, are described as if they generate and decay in the same manner as organisms. After describing the continuous changes that accompany the body from childhood to old age, Diotima describes a similar process of change in the soul of an individual:

...καὶ μὴ ὅτι κατὰ τὸ σῶμα,  
ἀλλὰ καὶ κατὰ τὴν ψυχὴν οἱ τρόποι, τὰ ἤθη, δόξαι, ἐπιθυ-  
μῖαι, ἡδοναί, λῦπαι, φόβοι, τούτων ἕκαστα οὐδέποτε τὰ  
αὐτὰ πάρεστιν ἐκάστω, ἀλλὰ τὰ μὲν γίνεταί, τὰ δὲ ἀπόλ-  
λυται. πολὺ δὲ τούτων ἀτοπώτερον ἔτι, ὅτι καὶ αἱ ἐπιστῆμαι (5)  
208 (a) μὴ ὅτι αἱ μὲν γίνονται, αἱ δὲ ἀπόλλυνται ἡμῖν, καὶ οὐδέ-  
ποτε οἱ αὐτοὶ ἐσμεν οὐδὲ κατὰ τὰς ἐπιστήμας, ἀλλὰ καὶ  
μία ἐκάστη τῶν ἐπιστημῶν ταὐτὸν πάσχει. ὁ γὰρ καλεῖται  
μελετᾶν, ὡς ἐξιούσης ἐστὶ τῆς ἐπιστήμης· λήθη γὰρ  
ἐπιστήμης ἐξοδος, μελέτη δὲ πάλιν καινὴν ἐμποιοῦσα ἀντὶ (5)  
τῆς ἀπιούσης μνήμην σφάζει τὴν ἐπιστήμην, ὥστε τὴν  
αὐτὴν δοκεῖν εἶναι. (207e1-208a7)

...And it's not just in his body, but in his soul, too, for none of his manners, customs, beliefs, desires, pleasures, pains, or fears ever remains the same, but some are coming to be in him while others are passing away. And what is still far stranger than that is that not only does one branch of knowledge come to be in us while another passes away and that we are never the same even in respect of our knowledge, but that each single piece of knowledge has the same fate. For what we call *studying* exists because knowledge is leaving us, because forgetting is the departure of knowledge, while studying puts back a fresh memory in place of what went away, thereby preserving a piece of knowledge, so that it

seems to be the same...<sup>137</sup>

The *Symposium* paints the picture of beliefs (δόξα) and items of knowledge (ἐπιστήμη)<sup>138</sup> in flux. Just like physical organisms, belief and knowledge come to be and pass away in the individual.<sup>139</sup>

The *Sophist* in particular can be read as a dialogue in which individual appearances (i.e., definitions of the sophist) follow one after the other, each appearance bringing something new to light after a revision. Definitions of the sophist can be understood as images that take on different shapes and forms – more generally, different parts or aspects of the same object may be depicted during collection and division. This was expressed by Sonja Tanner in her essay on the *Sophist*:

The *Sophist* begins with the image of the sophist as a wild beast to be hunted. As the dialogue unfolds, changes are made to this image, resulting in a different one altogether: that of the sophist as a man-made creation, a tapestry. The hypothesis is reformulated and revised. The image falls apart, but is replaced by another. Although impermanent and in flux, this replacement of the old by the new is productive (117).

This is an intriguing way of looking at the matter, and Tanner's description of the changing appearances of the sophist resembles the succession of beliefs and items of knowledge that is described in the *Symposium*. Both images of the sophist and the thoughts and feelings of the soul in the *Symposium* are in flux.

---

<sup>137</sup> Translated after A. Nehamas and P. Woodruff (Plato 490-91), with modifications.

<sup>138</sup> It is noteworthy that not just opinion is in a state of flux, but knowledge as well. For example, even if (hypothetically) the last definition of the sophist is a truthful one, it is not necessarily a stable definition – i.e., it could be forgotten and then revived in a form that *seems* to be the same (“...τὴν αὐτὴν δοκεῖν εἶναι”).

<sup>139</sup> In the dialogues as a whole, reasoning is often seen as a process involving a collection of objects and individuals: beliefs and branches of knowledge in the case of the *Symposium*; imprints on the wax block and birds in the aviary in the *Theaetetus*; portraits of the Statesman; and appearances of the Sophist.

An interpretation of the unlimited (ἄπειρον) as the variable characteristics of individuals was presented in Section 2.5. In the *Symposium*, beliefs and items of knowledge are likened to individual organisms in flux (207e1-208a7 above). Gosling's example of a Persian cat serves as a useful parallel: we may know the general outline of such a creature, but each particular Persian cat that is encountered will have its own idiosyncrasies – i.e., there are countless variations (Section 2.5, pg. 152). Arguably, a similar observation may be made about the appearances of the *Sophist* and the *Statesman*: there are countless ways in which a single definition may fluctuate, thereby generating another definition. This is indicated by the division of sound in the *Philebus*: Theuth had *discovered* new kinds of sound (Section 1.2.4). Knowledge of music and the alphabet has not remained static over the centuries. Similarly, why would we not expect to discover new kinds of art, production, or imitation, thereby altering our definition of the sophist and the statesman? This is not to say that in reality there are countless Forms, only that from the standpoint of the inquirer, there are countless possible paths to choose from when revising or searching for a definition.

Thus, according to the *Symposium* the individual belief or item of knowledge is in flux and eventually dies and may come back again after studying (207e1-208a7, pg. 275 above), or it may be altered by argument: it has many incarnations. What the next definition of the sophist, or love or the statesman, might be, is indeterminate – there are unlimited possible definitions given that not all kinds have been discovered. In short, there does not seem to be a limit to the amount of revisions that can be made to a definition. The following section will present the argument that a better understanding of

the first operation, *seeing*, may shed light on the issue.

### 6.3.3 Further analysis of the three operations

In Section 2.2.1.3 (pg. 110) it was explained that there is a critical turning point in which the parts of a whole are suddenly discerned. The purpose of this section is to point the way to an analysis of this turning point by drawing on material in the *Parmenides* and the *Symposium*.

The following passage in the *Parmenides* describes a moment of change (e.g., between rest and motion, or vice versa) as follows:

(d) Ἄρ' οὖν ἔστι τὸ ἄτοπον τοῦτο,  
 ἐν ᾧ τότ' ἂν εἴη, ὅτε μεταβάλλει; — Τὸ ποῖον δὴ; — Τὸ  
 ἐξαίφνης. τὸ γὰρ ἐξαίφνης τοιόνδε τι ἔοικε σημαίνειν, ὡς  
 ἐξ ἐκείνου μεταβάλλον εἰς ἑκάτερον. οὐ γὰρ ἕκ γε τοῦ  
 ἐστάναι ἐστῶτος ἔτι μεταβάλλει, οὐδ' ἐκ τῆς κινήσεως (5)  
 κινουμένης ἔτι μεταβάλλει· ἀλλὰ ἡ ἐξαίφνης αὕτη φύσις  
 ἄτοπός τις ἐγκάθηται μεταξύ τῆς κινήσεώς τε καὶ στάσεως,  
 (e) ἐν χρόνῳ οὐδενὶ οὔσα, καὶ εἰς ταύτην δὴ καὶ ἐκ ταύτης τό τε  
 κινούμενον μεταβάλλει ἐπὶ τὸ ἐστάναι καὶ τὸ ἐστὸς ἐπὶ τὸ  
 κινεῖσθαι. (156d1-156e3)

“Is there, then, this strange thing in which [the one] might be, just when it changes? – “What strange thing?” – “The instant. The instant seems to signify something such that changing occurs from it to each of two states. For a thing doesn’t change from rest while rest continues, or from motion while motion continues. Rather, this strange creature, the instant, lurks between motion and rest – being in no time at all – and to it and from it the moving thing changes to resting and the resting thing changes to moving...”<sup>140</sup>

At the moment of change, the one is neither in motion nor at rest – it is rather in “the instant” (“Τὸ ἐξαίφνης”) which is between motion and rest (156e7). Parmenides

<sup>140</sup> Translated by Mary Louise Gill and Paul Ryan (Plato 388), with modifications.

emphasizes that this observation applies not only to changes involving motion and rest, but to other changes, including the change from one to many, and from like to unlike, and vice versa:

...Κατὰ δὴ τὸν αὐτὸν λόγον καὶ ἐξ ἑνὸς  
ἐπὶ πολλὰ ἰὸν καὶ ἐκ πολλῶν ἐφ' ἑν οὔτε ἓν ἐστὶν οὔτε (5)  
πολλά, οὔτε διακρίνεται οὔτε συγκρίνεται. καὶ ἐξ ὁμοίου  
ἐπὶ ἀνόμοιον καὶ ἐξ ἀνομοίου ἐπὶ ὅμοιον ἰὸν οὔτε ὅμοιον  
οὔτε ἀνόμοιον, οὔτε ὁμοιούμενον οὔτε ἀνομοιούμενον (157a4-8)

“...Indeed, according to the same argument, when it goes from one to many and from many to one, it is neither one nor many, and neither separates nor combines. And when it goes from like to unlike and from unlike to like, it is neither like nor unlike, nor is it being made like or unlike.”<sup>141</sup>

This is very curious, and it raises the following question: what happens in the instant between seeing a whole and discerning its parts? In other words, what happens when reasoning moves from one to many, as is the case where a “seam” appears in belief-mimicry (δοξομιμητική), where the latter is described as if it were a piece of iron that appears sound one moment, but not the next (see Section 2.2.4, pg. 129)? One can ask the same question with any of the three operations: what happens in the step between discerning a part and naming it? What happens when one part is placed beside another?

It remains to be determined how the instant bridges the gap between discerning the many in the one and the one in the many, and this raises the following question: can a finer-grained analysis of collection and division and the three operations be achieved through a better understanding of the instant and its role as a transition point between steps of reasoning? It may be the case that there is a single moment that occurs during collection in which the “seeing together” of the scattered many yields a single idea, and

---

<sup>141</sup> Translated by Mary Louise Gill and Paul Ryan (Plato 388-389)



conversely a single moment that occurs during division in which the parts of a whole come to light.<sup>142</sup>

It is worth noting that in the *Symposium*, the final step that occurs between contemplating the sea of beauty and recognition of the Form itself occurs in an instant. Diotima describes the final step in which the lover catches sight of knowledge of Beauty:

(ε)...πειρῶ δέ μοι, ἔφη, τὸν νοῦν προσέχειν ὡς οἶόν  
τε μάλιστα. ὅς γάρ ἂν μέχρι ἐνταῦθα πρὸς τὰ ἐρωτικά  
παιδαγωγηθῆ, θεώμενος ἐφεξῆς τε καὶ ὀρθῶς τὰ καλά, πρὸς  
τέλος ἤδη ἰὼν τῶν ἐρωτικῶν ἐξαίφνης κατόψεται τι θαυ-  
μαστὸν τὴν φύσιν καλόν, τοῦτο ἐκεῖνο, ὃ Σώκρατες, οὗ δὴ (5)  
ἔνεκεν καὶ οἱ ἔμπροσθεν πάντες πόνοι ἦσαν... (210e1-6)

“Try to pay attention to me,” she said, “as best you can. You see, the man who has been thus far guided in matters of Love, who has beheld beautiful things in the right order and correctly, is coming now to the goal of Loving: all of a sudden he will catch sight of something wonderfully beautiful in its nature; that, Socrates, is the reason for all his earlier labors...”<sup>143</sup>

The step that occurs in an instant not only crosses the boundary from many to one – i.e., from a sea of beauty to the Form of beauty, it results in the completion (τέλος) of reasoning. This passage indicates that the final endpoint of reasoning – i.e., the limit of reasoning – is the sudden seeing (“ἐξαίφνης κατόψεται”) of a Form. Perhaps this step is the transition from image or representation to the thing itself, and in this sense the instant that leads to an experience of a Form may be the final step that brings the reasoner to the conclusion of reasoning.

---

<sup>142</sup> It was argued in Section 4.4.1 that a ‘ὄρος’ (a musical note in the *Philebus*, a term in the *Analytics*) acts as a boundary or limit. Similarly, it may be that the instant serves as a boundary between the one and the many and vice versa. This moment or “instant” may be analogous to a term or limit as described in the *Philebus*: as a note divides intervals of sound, an instant divides intervals of reasoning.

<sup>143</sup> Translated by A. Nehamas and P. Woodruff (Plato 493)

## 6.4 Conclusion

Sections 6.3.1-6.3.3 indicate avenues for future research. To reiterate the point made in Section 6.1, the purpose of these sections was to introduce questions and problems that, while not directly related to the central thesis of this study, may reveal some important aspects of collection and division in light of the analysis made in the previous chapters. In Section 6.3.1, it was explained that while images play a crucial role in collection and division and in the dialogues in general, they are problematic: since images can misrepresent, how can it be determined whether an image is truthful? In Section 6.3.2, a related problem was presented: in the dialogues, belief and knowledge are often represented as collections of individuals. Not only individual organisms, but individual beliefs and definitions may be subject to countless variations. If this is the case, how can one reach an endpoint if there are limitless ways in which a belief or definition may be modified? Plato's theory of Forms and related topics such as recollection may be helpful in answering these questions: if Forms and their interrelations can be recollected, for example, then knowledge derived from recollection can be used to evaluate the results of collection and division. This is but one possible avenue for future inquiry. Section 6.3.3 presented the third and final avenue for future research: the concept of the instant as described in the *Parmenides* could serve as the basis of a more fine-grained analysis of the particular "steps" of collection and division and the three operations.

In conclusion, the purpose of this study was to defend the thesis that collection and division define logical frameworks that underlie both deductive and non-deductive reasoning. In some cases, genus-species trees are defined, in other cases, a structure of

interwoven threads is articulated. These structures can serve as starting points for other lines of reasoning. Thus, collection and division are wide in scope. They are not restricted to the production of one kind of structure, nor are they limited to one domain of inquiry. As stated in Section 1.6, collection and division are the means by which all the discoveries of the arts are made and they can be used to both teach and inquire. In short, collection and division give us the ability to speak and to think.

### Works Cited

- Ackrill, John. "In Defense of Platonic Division." *Essays on Plato and Aristotle*. Oxford: Clarendon Press, 1997. 93-109. Print.
- Adam, James. Notes. *Plato in Twelve Volumes*. Vols. 5-6. By Plato. Trans. Paul Shorey. Cambridge: Harvard University Press, 1969. *Perseus Digital Library*. Web. 31 Aug. 2012.
- Ademollo, Francesco. *The Cratylus of Plato: A Commentary*. Cambridge: Cambridge University Press, 2011. Print.
- Ambuel, David. *Image and Paradigm in Plato's Sophist*. Las Vegas: Parmenides Publishing, 2007. Print.
- Aristotle, *The Complete Works of Aristotle*. Ed. J. Barnes. Clayton, Ga: IntelLex Corporation, 1992. Web. 34 Feb. 2013.
- Ast, Friedrich. *Lexicon Platonicum; sive, Vocum Platoniarum index*. Cambridge: Cambridge University Press. 2012. *Cambridge Books Online*. Web. 21 Dec. 2014.
- Balme, D.M. "Aristotle's Use of Division and Differentiae." *Philosophical Issues in Aristotle's Biology*. Ed. Allan Gotthelf. Cambridge: Cambridge University Press, 1987. Print.
- Barker, Andrew. "Plato's Philebus: The Numbering of a Unity." *Apeiron* 29.4 (1996): 143-164. *JSTOR*. Web. 11 Oct. 2012.
- Barnes, Jonathan. *Aristotle: Posterior Analytics*. 2nd ed. Ed. J. Barnes. Trans. J. Barnes. Oxford: Clarendon Press, 1994. Print.
- . "Grammar on Aristotle's Terms." *Rationality in Greek Thought*. Eds. Frede, Michael and Striker, Gisela. Oxford: Clarendon Press, 1996. Print.

- . Introduction. *Introduction*. By Porphyry. Oxford: Clarendon Press, 2003. ix-xxiv. Print.
- . "Proof and the Syllogism." *Aristotle on Science: The Posterior Analytics: Proceedings of the Eight Symposium Aristotelicum held in Padua from September 7 to 15, 1978*. Ed. Berti, Enrico. Padua: Antenore, 1981. Print.
- . *Truth, etc.: Six Lectures on Ancient Logic*. Oxford: Oxford University Press, 2009. *Oxford Scholarship Online*. Web. 23 Mar. 2015.
- Beekes, Robert. *Etymological Dictionary of Greek*. Leiden: Brill, 2010. Print.
- Bergmann, Merrie, James Moor and Jack Nelson. *The Logic Book*. 2<sup>nd</sup> ed. New York: McGraw Hill, 1990. Print.
- Bocheński, I.M. *A History of Formal Logic*. 2nd ed. Trans. Ivo Thomas. New York: Chelsea Publishing Company, 1970. Print.
- Bolton, Robert. "Plato's Discovery of Metaphysics: The New *Methodos* of the *Phaedo*." *Method in Ancient Philosophy*. Ed. Jyl Gentzler. Oxford: Oxford University Press, 2001. Print.
- Brown, Leslie. "Definition and Division in Plato's Sophist." *Definition in Greek Philosophy*. Ed. David Charles. Oxford: Oxford University Press, 2010. *Oxford Scholarship Online*. Web. 30 Oct. 2014.
- Cherniss, Harold. *Aristotle's Criticism of Plato and the Academy*. Baltimore: Johns Hopkins Press, 1944. Print.
- . *The Riddle of the Early Academy*. Berkeley: University of California Press, 1945. Print.
- Cohen, S.M. "Plato's Method of Division." *Patterns in Plato's thought: papers arising*

*out of the 1971 West Coast Greek Philosophy Conference*. Ed. J.M.E. Moravcsik.

Dordrecht: Reidel, 1973. Print.

Corcoran, John. "Future Research on Ancient Theories of Communication and Reasoning." *Ancient Logic and its Modern Interpretations: Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972*. Ed. John Corcoran. Boston: D. Reidel, 1974. 185-187. Print.

Dancy, R.M. *Plato's Introduction of Forms*. Cambridge: Cambridge University Press, 2006. Print.

Eliot, T.S. *The Complete Poems and Plays*. London: Faber and Faber, 1969. Print.

Einarson, Benedict. "On Certain Mathematical Terms in Aristotle's Logic: Part II." *The American Journal of Philology* 57:2 (1936): 151-172. *JSTOR*. Web. 10 Dec. 2014.

Fossheim, Hallvard. "Method in the *Philebus*." *Plato's Philebus: Selected Papers from the Eighth Symposium Platonicum*. Ed. Dillon, John and Brisson, Luc. Academia Verlag: Sankt Augustin, 2010. 31-35. Print.

Frede, Dorothea. "Plato on What the Body's Eye Tells the Mind's Eye." *Proceedings of the Aristotelian Society* 99 (1999): 191-209. *JSTOR*. Web. 31 Aug. 2012.

Frede, Michael. Introduction. *Rationality in Greek Thought*. Ed. Frede, Michael and Striker, Gisela. Oxford: Clarendon Press, 1996. 1-28. Print.

Geach, P.T. "Plato's Euthyphro: An Analysis and Commentary." *The Monist* 50.3 (1966): 369-382. Web. 10 June 2015.

Gill, Mary Louise. "Division and Definition in Plato's Sophist and Statesman." *Definition in Greek Philosophy*. Ed. David Charles. Oxford: Oxford University Press, 2010. *Oxford Scholarship Online*. Web. 30 Oct. 2014.

- . "The Divine Method in Plato's *Philebus*." *Plato's Philebus: Selected Papers from the Eighth Symposium Platonicum*. Ed. Dillon, John and Brisson, Luc. Academia Verlag: Sankt Augustin, 2010. 36-46. Print.
- Gold, Jeffrey B. "The Ambiguity of 'Name' in Plato's 'Cratylus'." *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition* 34.3 (1978): 223-251. *JSTOR*. Web. 5 Dec. 2014.
- Gomperz, Theodor. *The Greek Thinkers: A History of Ancient Philosophy*. Vol. 2. London: J. Murray, 1964. Print.
- Goold, G.P., ed. *Plato: Euthyphro, Apology, Crito, Phaedo, Phaedrus*. Trans. Harold N. Fowler. Cambridge, Mass.: Harvard University Press, 1977. Print.
- Gosling, J.C.B. *Plato: Philebus*. Oxford: Clarendon Press, 1975. Print.
- Gould, Josiah. "Deduction in Stoic Logic." *Ancient Logic and its Modern Interpretations: Proceedings of the Buffalo Symposium on Modernist Interpretations of Ancient Logic, 21 and 22 April, 1972*. Ed. John Corcoran. Boston: D. Reidel, 1974. 151-168. Print.
- Gowers, Timothy. "Abu Ja'far Muhammad ibn Mūsā al-Khwārizmī." *The Princeton Companion to Mathematics*. Ed. Timothy Gowers. Oxford: Princeton University Press, 2008. 736. Print.
- Grams, Laura. "The Eleatic Visitor's Method of Division." *Apeiron* 45.2 (2012): 130-156. *Reference Global Journals*. Web. 14 Oct. 2014.
- Griswold, Charles. *Self-Knowledge in Plato's Phaedrus*. University Park: The Pennsylvania State University Press, 1986. Print.
- Guthrie, W.K.C. *A History of Greek Philosophy*. 6 vols. Cambridge: Cambridge University Press, 1978. Print.

Hackforth, R. *Plato's Examination of Pleasure*. Cambridge: Cambridge University Press, 1945. Print.

---. "Plato's Divided Line and Dialectic." *The Classical Quarterly* 36.1/2 (1942): 1-9. *JSTOR*. Web. 31 Aug. 2012.

---. *Plato's Phaedrus*. Cambridge: Cambridge University Press, 1952. Print.

Hacking, Ian. "What is Logic?" *The Journal of Philosophy* 76.6 (1979): 285 - 319. *JSTOR*. Web. 10 Oct. 2012.

Harte, Verity. *Plato on Parts and Wholes: The Metaphysics of Structure*. Oxford: Clarendon Press, 2002. Print.

Hauser, Kai. "Cantor's Concept of Set in the Light of Plato's Philebus." *The Review of Metaphysics* 63.4 (2010): 783-805. Web. 31 Aug. 2012.

Heath, Thomas. *A History of Greek Mathematics*. Oxford: Clarendon Press, 1960. Print.

Henderson, Jeffrey, ed. *Plato: The Statesman, Philebus, Ion*. Trans. Harold N. Fowler, W.R.M. Lamb. Cambridge, Mass.: Harvard University Press, 2006. Print.

---. *Plato: Theaetetus, Sophist*. Trans. Harold N. Fowler. Cambridge, Mass.: Harvard University Press, 2006. Print.

Hoerber, Robert. "Plato's 'Euthyphro'." *Phronesis* 3:2 (1958): 95-107. *JSTOR*. Web. 13 Dec. 2014.

Huffman, Carl. *Archytas of Tarentum: Pythagorean, Philosopher and Mathematician King*. Cambridge: Cambridge University Press, 2005. *Cambridge Books Online*. Web. 30 Jul. 2012.

Ionescu, Cristina. "Dialectic in Plato's Sophist: Division and the Communion of Kinds."



- Arethusa* 46.1 (2013): 41-64. *Project Muse*. Web. 24 Oct. 2014.
- Kahn, Charles H. *The Art and Thought of Heraclitus: An Edition of the Fragments with Translation and Commentary*. Cambridge: Cambridge University Press, 1981. Print.
- Kneale, William, and Martha Kneale. *The Development of Logic*. Oxford: Clarendon Press, 1962. Print.
- Knorr, Wilbur. "Techniques of Fractions in Ancient Egypt and Greece." *Historia Mathematica* 9 (1982): 133-171. *ScienceDirect*. Web. 11 Oct. 2012.
- Kolb, David. "Pythagoras Bound: Limit and Unlimited in Plato's Philebus." *Journal of the History of Philosophy* 21.4 (1983): 497-511. *Project Muse*. Web. 31 Aug. 2012.
- Lennox, James. "Divide and explain: the *Posterior Analytics* in practice." *Philosophical Issues in Aristotle's Biology*. Ed. Allan Gotthelf. Cambridge: Cambridge University Press, 1987. *Cambridge Books Online*. Web. 27 Dec. 2014
- Letwin, Oliver. "Interpreting the 'Philebus'." *Phronesis* 26.3 (1981): 187-206. *JSTOR*. Web. 31 Aug. 2012.
- Lever, Katherine. "Middle Comedy, Neither Old nor New but Contemporary." *The Classical Journal* 49.4 (1954): 167 - 180. *JSTOR*. Web. 10 Oct. 2012.
- Liddell, H. and Scott, R. *A Greek-English Lexicon*. New York: Oxford University Press, 1996. Print.
- Lloyd, A.C. "Plato's Description of Division." *The Classical Quarterly* 2.1/2 (1952): 105-112. *JSTOR*. Web. 31 Aug. 2012.
- Lloyd, G.E. *Polarity and Analogy*. Cambridge: Cambridge University Press, 1966. Print.
- Maiatsky, Michail. *Platon, penseur du visuel*. Paris: L'Harmattan, 2005. Print.
- McCabe, Mary Margaret. *Plato's Individuals*. Princeton: Princeton University Press,

1994. Print.
- Meinwald, Constance. "One/Many Problems: 'Philebus' 14c1-15c3." *Phronesis* 41.1 (1996): 95-103. *JSTOR*. Web. 31 Aug. 2012.
- . "The Philebus." *The Oxford Handbook of Plato*. Ed. Gail Fine. Oxford: Oxford University Press, 2008. *Oxford Handbooks Online*. Web. 25 Oct. 2014.
- Menn, Stephen. "Collecting the Letters." *Phronesis* 43.4 (1998): 291-305. *JSTOR*. Web. 31 Aug. 2012.
- Menzel, Christopher. "Cantor and the Burali-Forti Paradox." *The Monist* 67.1 (1984): 92-107. *POIESIS*. Web. 11 Oct. 2012.
- Merrill, Jacqueline. "The Organization of Plato's 'Statesman' and the Statesman's Rule as a Herdsman." *Phoenix* 57:1/2 (2003): 35-56. *JSTOR*. Web. 10 Oct. 2014.
- Moravcsik, J.M.E. *Plato and Platonism: Plato's Conception of Appearance and Reality in Ontology, Epistemology, and Ethics, and its Modern Echoes*. Oxford: Blackwell, 1992. Print.
- . "Plato's Method of Division." *Patterns in Plato's thought: papers arising out of the 1971 West Coast Greek Philosophy Conference*. Ed. J.M.E. Moravcsik. Dordrecht: Reidel, 1973. Print.
- Notomi, Noburu. *The Unity of Plato's Sophist: Between the Sophist and the Philosopher*. Cambridge: Cambridge University Press, 1999. Print.
- Page, T.E., et al., eds. *Diogenes Laertius: Lives of Eminent Philosophers*. Trans. R.D. Hicks. Vol. 2. Cambridge, Mass.: Harvard University Press, 1965. Print.
- Patterson, Richard. *Image and Reality in Plato's Metaphysics*. Indianapolis: Hackett

- Publishing Company, 1985. Print.
- Patzig, Günther. *Aristotle's Theory of the Syllogism: A Logico-Philological Study of Book A of the Prior Analytics*. Trans. Jonathan Barnes. Dordrecht: D. Reidel Publishing Company, 1968. Print.
- Peirce, C.S. "On the Algebra of Logic." *Collected Papers of Charles Sanders Peirce*. 6 vols. Eds. Charles Hartshorne and Paul Weiss. Cambridge: Harvard University Press, 1933. Print.
- Pellegrin, Pierre. "Logical difference and biological difference: the unity of Aristotle's thought." *Philosophical Issues in Aristotle's Biology*. Ed. Allan Gotthelf. Cambridge: Cambridge University Press, 1987. *Cambridge Books Online*. Web. 11 Oct. 2014.
- Philip, James A. "Platonic Diairesis." *Transactions and Proceedings of the American Philological Association* 97 (1966): 335-358. *JSTOR*. Web. 23 Sept. 2014.
- Plato. *Plato: Complete Works*. Ed. John Cooper. Cambridge: Hackett Publishing Company, 1997. Print.
- Porphyry. *Introduction*. Trans. Jonathan Barnes. Oxford: Clarendon, 2003. Print.
- Priest, Graham. "Entrevista – Graham Priest." Interview with Felipe Castelo et al. *Pólemos* 2:4 (2013): 167 - 194. Web. 1 July 2015.
- . "Revising Logic." Munich Center for Mathematical Philosophy Conference on Paradox and Logical Revision. Ludwig Maximilians Universität, München, Germany. July 2012. Web. 1 July 2015.
- Ross, W.D. *Aristotle's Prior and Posterior Analytics: A Revised Text with Introduction and Commentary*. London: Oxford at the Clarendon Press, 1965. Print.
- Rowe, C.J. *Plato: Phaedrus*. Warminster: Aris & Phillips, 1986. Print. *Thesaurus*

- Linguae Graecae*. University of California, Irvine, 1972. Web. 29 Sep. 2013.
- Sayre, Kenneth. *Metaphysics and method in Plato's Statesman*. Cambridge: Cambridge University Press, 2006. Print.
- . *Plato's Analytic Method*. Chicago: University of Chicago Press, 1969. Print.
- Sedley, David. *Plato's Cratylus*. Cambridge: Cambridge University Press, 2003. Print.
- Simons, Peter. *Parts: A Study in Ontology*. Oxford: Clarendon Press, 1987. Print.
- . "Real Wholes, Real Parts: Mereology without Algebra." *The Journal of Philosophy* 103:12 (2006): 597-613. *JSTOR*. Web. 9 Dec. 2014.
- Smith, Robin. *Prior analytics / Aristotle; translated, with introduction, notes, and commentary by Robin Smith*. Cambridge: Hackett, 1989. Print.
- Stenzel, Julius. *Plato's Method of Dialectic*. Trans. D.J. Allan. Oxford: Clarendon Press, 1940. Print.
- Tanner, Sonja. *In Praise of Plato's Poetic Imagination*. Plymouth: Lexington Books, 2010. Print.
- Tarán, Leonardo. *Speusippus of Athens: A Critical Study With a Collection of the Related Texts and Commentary*. Leiden: Brill, 1981. *Google Books*. Web. 30 Aug. 2012.
- Taylor, A.E. *Plato: The Man and His Work*. 3<sup>rd</sup> ed. London: Methuen, 1929. Print.
- Thomas, Nigel J.T. "Supplement to Mental Imagery: Plato and his Predecessors." *The Stanford Encyclopedia of Philosophy (Fall 2014 Edition)*. Ed. Edward N. Zalta. Web. 11 July 2015.
- Trevaskis, J.R. "Classification in the 'Philebus'." *Phronesis* 5.1 (1960): 39-44. *JSTOR*. Web. 31 Aug. 2012.
- . "Division and Its Relation to Dialectic and Ontology in Plato." *Phronesis*

12.2 (1967): 118-129. *JSTOR*. Web. 30 Aug. 2012.

Tuominen, Miira. "Alexander and Philoponus on *Prior Analytics* I 27-30: Is There Tension between Aristotle's Scientific Theory and Practice?" *Interpreting Aristotle's Posterior Analytics in Late Antiquity and Beyond*. Eds. Frans A.J. de Haas, Mariska Leunissen, and Marije Martijin. Leiden: Brill, 2010. Print.

---. *Apprehension and Argument: Ancient Theories of Starting Points for Knowledge*. Dordrecht: Springer, 2007. *SpringerLink*. Web. 28 Apr. 2016.

## APPENDIX A:

Selected Passages on Collection and Division<sup>144</sup>*The Phaedrus*:<sup>145</sup>

## 1. 265b2:

ΣΩ. Τῆς δὲ θείας τεττάρων θεῶν τέτταρα μέρη διελόμενοι... (265b2)

Socrates: We also distinguished four parts within the divine kind and connected them to four gods... (pg. 542)<sup>146</sup>

## 2. 271d3-5:

---

<sup>144</sup> The *Phaedrus*, *Sophist*, *Statesman*, and *Philebus* are commonly held to be representative of collection and division. However, even within this particular set of dialogues, it is not always clear which passages concern collection and division and which do not. This appendix is based on Meinwald's list of passages that include a key term of the method, διαίρεσις ("division"). Meinwald defines the list as follows:

While there are many "ordinary" occurrences of forms of διαίρεσις in Plato, and many others of which one would be ill-advised to pronounce whether they are technical or not, the number of occurrences that clearly apply to the technical case is enormous: *Phaedrus* 273e1, 265b2, 271d4, *Sophist* 225a4, 235b8, 235c3, 221e2, 220b10, 235d4, 253d1, 220b14, 267d7, 265a5, 264c4, 219e7, 266a11, 223d2, 220a9, 266a8, 265a11, 229d6, 235c8, 226c3, 283d6, *Statesman* 261a5, 262d7, 264b7, 265d10, 286d9, 266a5, 262d1, 284e2, 258e4, 285a7, 291e3, 302d6, 265c2, 264a8, 276e7, 287c3, 260b4, 263e3, 276a5, 262c8, 285a5, 265a3, 276a3, 279b8, 262d1 [sic], 276d5, 260e5, 264e4, 260b5, 262a5, 262e4, 261c2, 265c6, 282c9, 265b8, 266c2, 276a1, 262b4, 265b6, 263c5, 282d1, *Philebus* 18c3, 49b6, 48d6, 20c4, 20a6, 49a7 ("One/Many Problems" 98).

While Meinwald states that these passages employ the term διαίρεσις in a "technical" sense (i.e., under one interpretation, these are passages in which collection and division produce genus-species relations), no list as specific as this would find universal acceptance. For example, Trevaskis argues that the illustrations given in *Philebus* 17a – 18d "are not recognizable illustrations of Collection and Division" ("Classification in the *Philebus*" 42). In addition, Meinwald's list covers only one term, "διαίρεσις", yet Plato uses other terms for division (e.g. 'τέμνω' (cut) is used at *Sophist* 264e2; see 1.3.3, pg. 45), and the list does not include passages on collection. As such, the list is incomplete, but it does indicate how frequently just one term is used, and it is useful for giving a general idea of the scope and purpose of division.

<sup>145</sup> Translations by A. Nehamas and P. Woodruff (cited under Plato in Works Cited), with modifications.

<sup>146</sup> Page numbers after English translations refer to Plato in Works Cited.

ΣΩ. ... τούτων δὲ δὴ  
οὕτω διηρημένων, λόγων αὖ τόσα καὶ τόσα ἔστιν εἶδη, τοιόνδε  
ἕκαστον. (271d3-5)

Socrates: ... Those distinctions established, there are, in turn, so-and-so many  
kinds of speech, each of such-and-such a sort. (pg. 548)

### 3. 273d8-273e4:

ΣΩ. ... ὡς ἐὰν μή τις τῶν τε ἀκουσο-  
(ε) μένων τὰς φύσεις διαριθμήσῃται, καὶ κατ' εἶδη τε διαιρεῖσθαι  
τὰ ὄντα καὶ μὴ ἰδέα δυνατὸς ἢ καθ' ἓν ἕκαστον περιλαμ-  
βάνειν, οὐ ποτ' ἔσται τεχνικὸς λόγων πέρι καθ' ὅσον  
δυνατὸν ἀνθρώπων. (273d8-273e4)

Socrates: ... No one will ever possess the art of speaking, to the extent that  
any human being can, unless he acquires the ability to enumerate the sorts of  
characters to be found in any audience, to divide everything according to  
its kinds, and to grasp each single thing firmly by means of one form. (pg. 550)

### *The Sophist*:<sup>147</sup>

#### 4. 219e7:

ΞΕ. Τὸ μὲν ἀψύχου γένους διελομένους, τὸ δ' ἐμψύχου. (219e7)

---

<sup>147</sup> Translations by Nicholas P. White (cited under Plato in Works Cited), with modifications.

Stranger: We divide it [hunting] into the hunting of living things and the hunting of lifeless things. (pg. 240)

**5. 220a7-10:**

ΞΕ. Ζωοθηρικῆς δὲ ἄρ' οὐ διπλοῦν εἶδος ἂν λέγοιτο ἐν δίκη, τὸ μὲν πεζοῦ γένους, πολλοῖς εἶδεσι καὶ ὀνόμασι διηρημένον, πεζοθηρικόν, τὸ δ' ἕτερον νευστικοῦ ζώου πᾶν ἐνυγροθηρικόν; (10) (220a7-10)

Stranger: And isn't it right to say that animal-hunting has two types? One is land-hunting, the hunting of things with feet, which is divided into many types with many names. The other is aquatic hunting, which hunts animals that swim. (pg. 240)

**6. 220b10-14:**

ΞΕ. Τί δέ; ταύτην αὖ τὴν θήραν ἄρ' οὐκ ἂν κατὰ μέγιστα μέρη δύο διέλοιμεν; (10)

ΘΕΑΙ. Κατὰ ποῖα;

ΞΕ. Καθ' ἃ τὸ μὲν ἔρκεσιν αὐτόθεν ποιεῖται τὴν θήραν, τὸ δὲ πληγῆ.

ΘΕΑΙ. Πῶς λέγεις, καὶ πῆ διαιρούμενος ἐκάτερον; (220b10-14)

Stranger: Well then, this kind of hunting might be divided into two main parts.

Theaetetus: What are they?

Stranger: One of them does its hunting with stationary nets and the other



one does it by striking.

Theaetetus: What do you mean? How are you dividing them? (pg. 240)

**7. 221e2-3:**

ΞΕ. Δίχα που νυνδὴ διείλομεν τὴν ἄγραν πᾶσαν, νευστικοῦ μέρους, τὸ δὲ πεζοῦ τέμνοντες. (221e2-3)

Stranger: We divided all hunting into two parts, one for land animals and one for swimming animals. (pg. 242)

**8. 223d2-3:**

ΞΕ. Τὴν μὲν τῶν αὐτουργῶν αὐτοπωλικὴν διαιρουμένην, τὴν δὲ τὰ ἀλλότρια ἔργα μεταβαλλομένην μεταβλητικὴν. (223d2-3)

Stranger: One part is the sale of things that the seller himself makes. The other is purveying, that is, the purveying of things other people make. (pg. 244)

**9. 225a4:**

ΞΕ. Οὐκ ἀπὸ τρόπου τοίνυν ἐστὶ διαιρεῖν αὐτὴν δίχα. (225a4)

Stranger: And it makes sense to divide it [combat] in two. (pg. 245)

**10. 226c3:**

ΞΕ. Διαιρετικά που τὰ λεχθέντα εἴρηται σύμπαντα. (226c3)

Stranger: All the things I've mentioned are kinds of dividing (pg. 247).

**11. 229d5-6:**

ΞΕ. ...ἀλλὰ γὰρ ἡμῖν ἔτι καὶ τοῦτο σκεπτέον, ἅρ' ἄτομον ἤδη ἐστὶ (5)  
πᾶν ἢ τινα ἔχον διαίρεσιν ἀξίαν ἐπωνυμίας.(229d5-6)

Stranger: ...But we still  
have to think about whether education is indivisible or has divisions that  
are worth mentioning. (pg. 250)

**12. 235b8-235c4:**

ΞΕ. Δέδοκται τοίνυν ὅτι τάχιστα διαιρεῖν τὴν εἰδωλο-  
ποικλὴν τέχνην, καὶ καταβάντας εἰς αὐτήν, ἐὰν μὲν ἡμᾶς εὐθὺς  
ὁ σοφιστὴς ὑπομείνη, συλλαβεῖν αὐτὸν κατὰ τὰ ἐπεσταλμένα (10)  
(c) ὑπὸ τοῦ βασιλικοῦ λόγου, κάκείνω παραδόντας ἀποφῆναι  
τὴν ἄγραν· ἐὰν δ' ἄρα κατὰ μέρη τῆς μιμητικῆς δύηται πη,  
συνακολουθεῖν αὐτῷ διαιροῦντας ἀεὶ τὴν ὑποδεχομένην αὐτὸν  
μοῖραν, ἕωσπερ ἂν ληφθῆ. (235b8-235c4)

Stranger: So it's settled. We'll divide the craft of copy-making as quickly  
as we can and we'll go down into it. Then if the sophist gives up right  
away we'll obey the royal command and we'll capture him and hand our  
catch over to the king. But if the sophist slips down somewhere into the  
parts of the craft of imitation, we'll follow along with him and we'll divide  
each of the parts that contain him until we catch him. (pp. 255-56)

**13. 235c8-235d5:**

ΞΕ. Κατὰ δὴ τὸν παρεληλυθότα τρόπον τῆς διαιρέσεως  
(d) ἔγωγέ μοι καὶ νῦν φαίνομαι δύο καθορᾶν εἶδη τῆς μιμητικῆς·  
τὴν δὲ ζητουμένην ιδέαν, ἐν ὁποτέρῳ ποθ' ἡμῖν οὔσα τυγχάνει,  
καταμαθεῖν οὐδέπω μοι δοκᾷ νῦν δυνατὸς εἶναι.

ΘΕΑΙ. Σὺ δ' ἄλλ' εἰπέ πρῶτον καὶ δίελε ἡμῖν τίνε τῶ  
δύο λέγεις. (5) (235c8-235d5)

Stranger: Going by the method of division that we've used so far, I think I see two types of imitation here too. But I don't think I can clearly tell yet which one the type or form we're looking for is in.

Theaetetus: Well, first tell us what distinction you mean. (pg. 256)

**14. 264c4-5:**

ΞΕ. Διειλόμεθα τῆς εἰδωλοποικῆς εἶδη δύο, τὴν μὲν  
εἰκαστικὴν, τὴν δὲ φανταστικὴν. (5) (264c4-5)

Stranger: We divided copy-making into two types, likeness-making and appearance-making. (pg. 288)

**15. 265a4-5:**

ΞΕ. Οὐκοῦν τότε μὲν ἤρχόμεθα ποιητικὴν καὶ κτητικὴν  
τέχνην διαιρούμενοι; (265a4-5)

Stranger: Didn't we begin by dividing expertise into productive and acquisitive? (pg. 289)

**16. 265a10-265b2:**

ΞΕ. Νῦν δέ γ' ἐπειδὴ μιμητικὴ περιείληφεν αὐτὸν τέχνη, (10)  
 δῆλον ὡς αὐτὴν τὴν ποιητικὴν δίχα διαιρετέον πρώτην.  
 (b) ἢ γὰρ που μίμησις ποίησις τίς ἐστίν, εἰδώλων μέντοι,  
 φαμέν, ἀλλ' οὐκ αὐτῶν ἐκάστων· ἢ γάρ; (265a10-265b2)

Stranger: But now, since he's included among experts in imitation, first we obviously have to divide productive expertise in two. We say imitation is a sort of production, but of copies and not of the things themselves. Is that right? (pg. 289)

**17. 266a8-11:**

ΞΕ. Τὰ δέ γ' ὡς ἐτέρως αὖ διηρημένα, μέρος μὲν ἓν  
 ἀφ' ἑκατέρας τῆς μερίδος αὐτοποιητικόν, τὸ δ' ὑπολοίπω  
 σχεδὸν μάλιστ' ἂν λεγοίσθην εἰδωλοποικῶ· καὶ κατὰ ταῦτα (10)  
 δὴ πάλιν ἡ ποιητικὴ διχῆ διαιρεῖται. (266a8-11)

Stranger: Then if we take the division we made the first way, one part of each of those parts is the production of originals. Just about the best thing to call the two parts that are left might be “copy-making.” That way, production is divided in two again. (pg. 290)

**18. 267d4-7:**

ΞΕ. Πόθεν οὖν ὄνομα ἑκατέρῳ τις αὐτῶν λήψεται  
 πρέπον; ἢ δῆλον δὴ χαλεπὸν ὄν, διότι τῆς τῶν γενῶν κατ' (5)

εἶδη διαιρέσεως παλαιά τις, ὡς ἔοικεν, ἀργία τοῖς ἔμπροσθεν  
καὶ ἀσύννους παρῆν, ὥστε μηδ' ἐπιχειρεῖν μηδένα διαιρεῖσθαι· (267d4-7)

Stranger: Where would you get a suitable name for each of them? Isn't it obviously hard to do, just because the people who came before us were thoughtless and lazy about dividing kinds into types, and so they never even tried to divide them. (pg. 292)

***The Statesman:*<sup>148</sup>**

**19. 258e4-5:**

ΞΕ. Ταύτη τοίνυν συμπάσας ἐπιστήμας διαίρει, τὴν μὲν  
πρακτικὴν προσειπών, τὴν δὲ μόνον γνωστικὴν. (5) (258e4-5)

Stranger: Well, divide all cases of knowledge in this way, calling the one sort practical knowledge, the other purely theoretical. (pg. 297)

**20. 260b3-5:**

ΞΕ. Ἄρ' οὖν συμπάσης τῆς γνωστικῆς εἰ τὸ μὲν ἐπι-  
τακτικὸν μέρος, τὸ δὲ κριτικὸν διαιρούμενοι προσειποίμεν,  
ἐμμελῶς ἂν φαῖμεν διηρῆσθαι; (5) (260b3-5)

---

<sup>148</sup> Translations by C.J. Rowe (cited under Plato in Works Cited), with modifications.

Stranger: So if we divided off two parts of theoretical knowledge as a whole, referring to one as directive and the other as making judgments, would we say that it had been divided suitably? (pg. 299)

**21. 260d11-261a9:**

*Note: surrounding text is included to provide context for discussion*

ΞΕ. Τί οὖν; εἰς ταῦτόν μείζομεν βασιλικὴν ἐρμηνευτικῆν, (e) κελευστικῆν, μαντικῆν, κηρυκικῆν, καὶ πολλαῖς ἐτέραις τούτων τέχναις συγγενέσιν, αἱ σύμπασαι τό γ' ἐπιτάττειν ἔχουσιν; ἢ βούλει, καθάπερ ἠκάζομεν νυνδὴ, καὶ τοῦνομα παρεικάσωμεν, ἐπειδὴ καὶ σχεδὸν ἀνώνυμον ὄν τυγχάνει τὸ τῶν αὐτεπιτακτῶν γένος, καὶ ταῦτα διελώμεθα, τὸ μὲν τῶν (5) βασιλέων γένος εἰς τὴν αὐτεπιτακτικὴν θέντες, τοῦ δὲ ἄλλου παντὸς ἀμελήσαντες, ὄνομα ἕτερον αὐτοῖς παραχωρήσαντες θέσθαι τινά; τοῦ γὰρ ἄρχοντος ἔνεκα ἡμῖν ἢ μέθοδος ἦν 261 (a) ἀλλ' οὐχὶ τοῦ ἐναντίου.

ΝΕ. ΣΩ. Πάνυ μὲν οὖν.

ΞΕ. Οὐκοῦν ἐπειδὴ τοῦτο μετρίως ἀφέστηκεν ἀπ' ἐκείνων, ἀλλοτριότητι διορισθὲν πρὸς οἰκειότητα, τοῦτο αὐτὸ πάλιν αὐ διαρεῖν ἀναγκαῖον, εἴ τινα τομὴν ἔτι ἔχομεν ὑπέικουσιν ἐν (5) τούτῳ;

ΝΕ. ΣΩ. Πάνυ γε.

ΞΕ. Καὶ μὴν φαινόμεθα ἔχειν· ἀλλ' ἐπακολουθῶν σύν-

τεμνε. (260d11-261a9)

Stranger: So – shall we mix together the expertise of the king with that of the interpreter, the person who gives the time to the rowers, the seer, the herald, and many other sorts of expertise related to these, just because they all have the features of issuing directions? Or do you want us to make up a name in line with the analogy we were using just now, since in fact the class of ‘self-directors’ happens pretty much to be without a name of its own? Should we divide these things this way, locating the class of kings as belonging to the ‘self-directing’ sort of expertise, and taking no notice of all the rest, leaving someone else to propose another name for them? For we set up our investigation in order to find the person who rules, not his opposite.

Young Socrates: Absolutely.

Stranger: Well then, since this<sup>149</sup> is at a certain distance from those others, distinguished by difference in relation to kinship, we must in turn divide it too, if we still find some cut yielding to us in it?

Young Socrates: Certainly.

Stranger: And what’s more, we seem to have one: follow on and make the cut with me. (pg. 300)

## 22. 261b13-261c2:

---

<sup>149</sup> the “self-directing” kind of expertise

ΞΕ. Τὸ μὲν ἐπὶ ταῖς τῶν ἀψύχων γενέσεσιν αὐτοῦ τάτ-  
(c) τοντες, τὸ δ' ἐπὶ <ταῖς> τῶν ἐμψύχων· καὶ πᾶν οὕτως ἤδη  
διαιρήσεται δίχα. (261b13-261c2)

Stranger: By assigning part of it to the production of inanimate things,  
part to that of animate things; and in this way it will all immediately be  
divided into two. (pg. 301)

**23. 262a5-6:**

ΞΕ. Παντάπασί γε προθυμότατα καὶ ἀνδρειότατα δι- (5)  
ήρησαι· μὴ μέντοι τοῦτό γε εἰς αὖθις κατὰ δύναμιν πάσχωμεν. (262a5-6)

Stranger: Yes, absolutely, you've made a very keen and courageous division!  
But let's try to avoid *this* happening again. (pg. 302)

**24. 262b2-5:**

ΞΕ. ... κάλλιστον μὲν γὰρ ἀπὸ τῶν ἄλλων εὐθὺς διαχωρίζειν  
τὸ ζητούμενον, ἂν ὀρθῶς ἔχη, καθάπερ ὀλίγον σὺ πρότερον  
οἰηθεὶς ἔχειν τὴν διαίρεσιν ἐπέσπευσας τὸν λόγον, ἰδὼν ἐπ'  
ἀνθρώπους πορευόμενον· (262b2-5)

Stranger: ... It's a really fine thing to separate off immediately what  
one is searching for from the rest, if one gets it right – as you thought you  
had the right division, just before, and hurried the argument on, seeing it  
leading to human beings; (pg. 302)



## 25. 262c8-263a1:

*Note: surrounding text is included to provide context for discussion*

NE. ΣΩ. Ποῖον οὖν δὴ φράζεις διαιρουμένους ἡμᾶς οὐκ ὀρθῶς ἄρτι δρᾶν;

ΞΕ. Τοιόνδε, οἷον εἴ τις τάνθρώπινον ἐπιχειρήσας δίχα (10)  
 (d) διελέσθαι γένος διαιροῖ καθάπερ οἱ πολλοὶ τῶν ἐνθάδε διαι-  
 νέμουσι, τὸ μὲν Ἑλληνικὸν ὡς ἐν ἀπὸ πάντων ἀφαιροῦντες  
 χωρὶς, σύμπασι δὲ τοῖς ἄλλοις γένεσιν, ἀπίροις οὔσι καὶ  
 ἀμείκτοις καὶ ἀσυμφώνοις πρὸς ἄλληλα, βάρβαρον μὲν κλήσει  
 προσειπόντες αὐτὸ διὰ ταύτην τὴν μίαν κλήσιν καὶ γένος (5)  
 ἐν αὐτὸ εἶναι προσδοκῶσιν· ἢ τὸν ἀριθμὸν τις αὖ νομίζοι  
 κατ' εἶδη δύο διαιρεῖν μυριάδα ἀποτεμνόμενος ἀπὸ πάντων,  
 (e) ὡς ἐν εἶδος ἀποχωρίζων, καὶ τῷ λοιπῷ δὴ παντὶ θέμενος ἐν  
 ὄνομα διὰ τὴν κλήσιν αὖ καὶ τοῦτ' ἀξιοῖ γένος ἐκείνου χωρὶς  
 ἕτερον ἐν γίγνεσθαι. κάλλιον δὲ πού καὶ μᾶλλον κατ' εἶδη  
 καὶ δίχα διαιροῖτ' ἄν, εἰ τὸν μὲν ἀριθμὸν ἀρτίῳ καὶ περιττῷ  
 τις τέμνοι, τὸ δὲ αὖ τῶν ἀνθρώπων γένος ἄρρενι καὶ θήλει, (5)  
 Λυδοὺς δὲ ἢ Φρύγας ἢ τινὰς ἑτέρους πρὸς ἅπαντας τάπτων  
 ἀποσχίζοι τότε, ἠνίκα ἀποροῖ γένος ἅμα καὶ μέρος εὐρίσκειν  
 263 (a) ἐκάτερον τῶν σχισθέντων. (262c8-263a1)

Young Socrates: Well then, what sort of thing are you saying we weren't doing right just now in our divisions?

Stranger: This sort of thing: it's as if someone tried to divide the human race into two and made the cut in the way that most people here carve things up, taking the Greek race away as one, separate from all the rest, and to all the other races together, which are unlimited in number, which don't mix with one another, and don't share the same language – calling this collection by the single appellation 'barbarian.' Because of this single appellation, they expect it to be a single family or class too. Another example would be if someone thought that he was dividing number into two real classes by cutting off the number ten-thousand from all the rest, separating it off as a single class, and in positing a single name for all the rest supposed here too that through getting the name this class too came into existence, a second single one apart from the other. But I imagine the division would be done better, more by real classes and more into two, if one cut number by means of even and odd, and the human race in its turn by means of male and female, and only split off Lydians or Phrygians or anyone else and ranged them against all the rest when one was at a loss as to how to split in such a way that each of the halves split off was simultaneously a real class and a part. (pg. 302)

#### **26. 263c4-7:**

ΞΕ. ... οἶμαι μὲν γὰρ μάλιστα, ὅθεν ἐρωτηθεὶς σὺ τὴν ἀγγελαιοτροφίαν ὅπη διαιρετέον εἶπες μάλα προθύμως δὺ' εἶναι ζώων (5)

γένη, τὸ μὲν ἀνθρώπινον, ἕτερον δὲ τῶν ἄλλων συμπάντων  
θηρίων ἔν. (263c4-7)

Stranger: ...I think it was pretty much the point at which you were asked how to divide herd-rearing, and you said with great keenness that there were two classes of living creatures, one human, and a second single one consisting of all the rest – the animals – together. (pg. 303)

**27. 263e3-4:**

ΞΕ. Μὴ πᾶν τὸ τῶν ζῴων γένος διαιρούμενοι, ἵνα ἦττον  
αὐτὰ πάσχωμεν. (263e3-4)

Stranger: By not dividing the class of living creatures as a whole, in order to lessen the risk of its happening to us. (pg. 303)

**28. 264a8-264b1:**

ΞΕ. Μὴ τοίνυν διαιρώμεθα ὥσπερ τότε πρὸς ἅπαντα  
ἀποβλέψαντες, μηδὲ σπεύσαντες, ἵνα δὴ ταχὺ γενώμεθα  
(b) πρὸς τῇ πολιτικῇ. (264a8-264b1)

Stranger: Well then, let's not divide in the way we did then, looking at everything, or in a hurry, just in order to get quickly to statesmanship. (pg. 304)

**29. 264b6-7:**

ΞΕ. ...πάλιν δ' οὖν ἐξ ἀρχῆς τὴν κοινο-  
τροφικὴν πειρώμεθα διαιρεῖν. (264b6-7)

Stranger: ... In any case, let's go back and try again from the beginning to divide collective rearing; (pg. 304).

**30. 264e3-4:**

ΞΕ. Πᾶς μὲν δὴ τό γε ξηροτροφικὸν τῆς ἀγελαιοτροφίας διέλοιτ' ἂν φύλον. (264e3-4)

Stranger: Everybody would divide the dry-land rearing sort of herd-rearing (pg. 305).

**31. 265a1-5:**

(a) ΞΕ. Καὶ μὴν ἐφ' ὃ γε μέρος ὥρμηκεν ἡμῖν ὁ λόγος, ἐπ' ἐκεῖνο δύο τινὲ καθορᾶν ὁδῶ τεταμένα φαίνεται, τὴν μὲν θάπτω, πρὸς μέγα μέρος σμικρὸν διαιρουμένην, τὴν δέ, ὅπερ ἐν τῷ πρόσθεν ἐλέγομεν ὅτι δεῖ μεσοτομεῖν ὡς μάλιστα, τοῦτ' ἔχουσιν μᾶλλον, μακροτέραν γε μὴν. (5) (265a1-5)

Stranger: Now it seems that there are two routes to be seen stretching out in the direction of the part towards which our argument has hurried, one of them quicker, dividing a small part off against a large one, while the other more closely observes the principle we were talking about earlier, that one should cut in the middle as much as possible, but is longer. (pg. 305).

**32. 265b5-9:**

ΞΕ. ...τήν (5)

δὲ δὴ διαίρεσιν ὄρα.

ΝΕ. ΣΩ. Λέγε.

ΞΕ. Τὰ πεζὰ ἡμῖν τῶν ἡμέρων, ὅσαπερ ἀγελαῖα, διηρημένα  
ἔστι φύσει δίχα. (265b5-9)

Stranger: ...Observe the division.

Young Socrates: Tell me what it is.

Stranger: Of tame things that live in herds, we find those that go on foot  
naturally divided into two. (pg. 305)

### 33. 265c2-8:

ΞΕ. Τὴν δὴ πεζονομικὴν διελὼν ἀπόδος ἑκατέρῳ τῷ μέρει  
λόγῳ χρώμενος. ἂν γὰρ ὀνομάζωιν αὐτὰ βουληθῆς, ἔσται σοι  
περιπεπλεγμένον μᾶλλον τοῦ δέοντος.

ΝΕ. ΣΩ. Πῶς οὖν χρὴ λέγειν; (5)

ΞΕ. Ὡδε: τῆς πεζονομικῆς ἐπιστήμης δίχα διαιρεθείσης  
τὸ μόριον θάτερον ἐπὶ τῷ κερασφόρῳ μέρει τῷ τῆς ἀγέλης  
ἐπιτετάχθαι, τὸ δὲ ἕτερον ἐπὶ τῷ τῆς ἀκεράτου. (265c2-8)

Stranger: Well then, divide the management of creatures that go on foot  
by assigning it to each of these two parts, using a descriptive phrase for  
the results of the division. For if you want to give them names, it will be  
more complicated than necessary.

Young Socrates: How then should it be put?

Stranger: Like this: by saying that when the knowledge that has to do with the management of creatures that go by foot is divided into two, one part is allocated to the horned part of the herd, the other to the hornless part. (pg. 305-6)

**34. 265d9-11:**

ΞΕ. Πότερον οὖν βούλει τῷ σχιστῷ τε καὶ τῷ καλουμένῳ μώνυχι διαρεῖν αὐτήν ἢ τῇ κοινογονίᾳ τε καὶ ἰδιογονίᾳ; (10) μανθάνεις γάρ που. (265d9-11)

Stranger: Well, do you want to divide it<sup>150</sup> by the split-hooved and the so-called ‘single-hooved,’ or by interbreeding and non-interbreeding? I think you grasp the point. (pg. 306)

**35. 266a5:**

ΝΕ. ΣΩ. Οὐ γὰρ οὖν. ἀλλὰ τίτι δὴ τῶ δύο διαιροῦμεν; (5) (266a5)

Young Socrates: No indeed. But what are we to use to divide the two classes? (pg. 306)

**36. 266b10 -266c2:**

ΞΕ. Πρὸς δὴ τούτοις ἕτερον αὖ τι τῶν πρὸς γέλωτα (10) (c) εὐδοκιμησάντων ἄν, ὃ Σώκρατες, ἄρα καθορῶμεν ἡμῖν γεγονὸς ἐν τοῖς διηρημένοις; (266b10 - 266c2)

---

<sup>150</sup> i.e., hornless creatures

Stranger: And there's more – do we see, Socrates, that there's something else resulting in our divisions that would itself have done well as a comic turn? (pg. 307)

**37. 276a1-7:**

(a) NE. ΣΩ. Ὅρθῶς. ἀλλ' ἢ μετὰ τοῦτο διαίρεσις αὐτῶν τίνα τρόπον ἐγίγνετ' ἄν;

ΞΕ. Κατὰ ταῦτὰ καθ' ἅπερ ἔμπροσθεν διηρούμεθα τὴν ἀγελαιοτροφικὴν πεζοῖς τε καὶ ἀπτῆσι, καὶ ἀμείκτοις τε καὶ ἀκεράτοις, τοῖς αὐτοῖς ἄν που τούτοις διαιρούμενοι καὶ τὴν (5) ἀγελαιοκομικὴν τὴν τε νῦν καὶ τὴν ἐπὶ Κρόνου βασιλείαν περιειληφότες ἄν ἤμεν ὁμοίως ἐν τῷ λόγῳ. (276a1-7)

Young Socrates: Correct. But in what way would the division following this be made?

Stranger: In the same way as we previously divided herd-rearing by footed and wingless, and non-interbreeding and hornless – by dividing herd-keeping too by these same things, I think, we would have included in our account to the same degree both the present sort of kingship and that in the time of Cronus. (pg. 318)

**38. 276d5-6:**

ΞΕ. ἼΗι τε τὸν θεῖον ἄν που διειλόμεθα νομέα χωρὶς καὶ (5)  
τὸν ἀνθρώπινον ἐπιμελητήν. (276d5-6)

Stranger: I imagine, where we would have divided off the divine herdsman,  
on one side, and the human carer on the other. (pg. 318)

**39. 276e6-8:**

ΞΕ. Νῦν δέ γε πάλιν ἐπανορθούμενοι, καθάπερ εἶπον,  
τὴν ἀνθρωπίνην ἐπιμελητικὴν δίχα διαιρώμεθα, τῷ βιαίῳ τε  
καὶ ἐκουσίῳ; (276e6-8)

Stranger: But now should we set things to rights again, and, as I said,  
should we divide the expertise of the human carer into two, by using the  
categories of the enforced and the voluntary? (pg. 319)

**40. 279b7-279c3:**

ΞΕ. Τί δῆτα οὐ, καθάπερ ἐν τοῖς ἔμπροσθε τέμνοντες  
μέρη μερῶν ἕκαστον διηρούμεθα, καὶ νῦν περὶ ὑφαντικὴν  
(c) ταῦτὸν τοῦτ' ἐδράσαμεν, καὶ κατὰ δύναμιν ὅτι μάλιστα διὰ  
βραχέων ταχὺ πάντ' ἐπελθόντες πάλιν ἤλθομεν ἐπὶ τὸ νῦν  
χρήσιμον; (279b7-279c3)

Stranger: Why then don't we now do the very same thing with weaving



that we did in what preceded, dividing each thing by cutting it into parts, and then cutting them? We'll get back to what is useful in the present context after covering everything as briefly and quickly as we can. (pg. 321)

**41. 282c5-8:**

ΞΕ. Αὐθις δὴ πάλιν συγκριτικῆς μόριον ἅμα καὶ ταλασιουργίας ἐν αὐτῇ γιγνόμενον λάβωμεν· ὅσα δὲ τῆς διακριτικῆς ἦν αὐτόθι, μεθιῶμεν σύμπαντα, δίχα τέμνοντες τὴν ταλασιουργίαν διακριτικῶ τε καὶ συγκριτικῶ τμήματι. (282c5-8)

Stranger: Then again, by contrast, let's take a part that is simultaneously a part of combination and of wool-working and takes place in the latter; and whatever parts of separation there were here, let's let all of them go, cutting wool-working into two by means of the cut between separation and combination. (pg. 324)

**42. 282c10-282d2:**

ΞΕ. Τὸ συγκριτικὸν τοίνυν αὖ σοι καὶ ταλασιουργικὸν (10)  
(d) ἅμα μόριον, ὃ Σώκρατες, διαιρετέον, εἶπερ ἰκανῶς μέλλομεν τὴν προρρηθεῖσαν ὑφαντικὴν αἰρήσειν. (282c10-282d2)

Stranger: Then in its turn, Socrates, you should divide the part that is simultaneously combination and wool-working, if indeed we are going to capture the aforesaid art of weaving. (pg. 325)

**43. 284e2-8:**

ΞΕ. Δῆλον ὅτι διαιροῖμεν ἂν τὴν μετρητικὴν, καθάπερ ἐρρήθη, ταύτη δίχα τέμνοντες, ἓν μὲν τιθέντες αὐτῆς μόριον συμπάσας τέχνας ὅποσαι τὸν ἀριθμὸν καὶ μήκη καὶ βάθη καὶ πλάτη καὶ ταχυτῆτας πρὸς τοῦναντίον μετροῦσιν, τὸ δὲ (5) ἕτερον, ὅποσαι πρὸς τὸ μέτριον καὶ τὸ πρέπον καὶ τὸν καιρὸν καὶ τὸ δέον καὶ πάνθ' ὅποσα εἰς τὸ μέσον ἀπωκίσθη τῶν ἐσχάτων. (284e2-8)

Stranger: It's clear that we would divide the art of measurement, cutting it in two in just the way we said, positing as one part of it all those sorts of expertise that measure the number, lengths, depths, breadths and speeds of things in relation to what is opposed to them, and as the other, all those that measure in relation to what is in due measure, what is fitting, the right moment, what is as it ought to be – everything that removes itself from the extremes of the middle (pg. 328).

#### 44. 285a4-285b6:

ΞΕ. ...διὰ δὲ τὸ μὴ κατ' εἶδη συνειθίσθαι σκοπεῖν διαιρουμένους ταῦτά τε τοσοῦτον διαφέροντα συμ- (5) βάλλουσιν εὐθύς εἰς ταῦτὸν ὅμοια νομίσαντες, καὶ τοῦναντίον αὖ τούτου δρῶσιν ἕτερα οὐ κατὰ μέρη διαιροῦντες, δέον, ὅταν (b) μὲν τὴν τῶν πολλῶν τις πρότερον αἴσθηται κοινωνίαν, μὴ προαφίστασθαι πρὶν ἂν ἐν αὐτῇ τὰς διαφορὰς ἴδη πάσας ὅποσαιπερ ἐν εἶδεσι κεῖνται, τὰς δὲ αὖ παντοδαπὰς ἀνομοιό-

τητας, ὅταν ἐν πλήθεσιν ὀφθῶσιν, μὴ δυνατὸν εἶναι δυσωπού-  
 μενον παύεσθαι πρὶν ἂν σύμπαντα τὰ οἰκεῖα ἐντὸς μιᾶς (5)  
 ὁμοιότητος ἕρξας γένους τινὸς οὐσία περιβάληται. (285a4-285b6)

Stranger: ... But because of their<sup>151</sup> not being accustomed to carrying on their investigations by dividing according to real classes, the people in question throw these things together at once, despite the degree of difference between them, thinking them alike – and then again they also do the opposite of this by dividing other things not according to parts, when the rule is that when one perceives first the community between the members of a group of many things, one should not desist until one sees in it all those differences that are located in classes, and conversely, with the various unlikenesses, when they are seen in multitudes, one should be incapable of pulling a face and stopping before one has penned all the related things within one likeness and actually surrounded them in some real class.

#### 45. 286d6-9:

ΞΕ. ...τό τε αὖ πρὸς τὴν τοῦ προβληθέντος ζήτησιν,  
 ὡς ἂν ῥᾶστα καὶ τάχιστα εὐροιμεν, δεύτερον ἀλλ' οὐ πρῶτον  
 ὁ λόγος ἀγαπᾷ παραγγέλλει, πολὺ δὲ μάλιστα καὶ πρῶτον  
 τὴν μέθοδον αὐτὴν τιμᾶν τοῦ κατ' εἶδη δυνατὸν εἶναι διαιεῖν... (286d6-9)

---

<sup>151</sup> i.e., sophisticated people

Stranger: ... And again, as for what contributes towards the inquiry into the subject set before us, what we have said commits us to making a second and not a first priority of the question how we might find it most easily and quickly, and to give by far the greatest and primary value to the pursuit itself of the ability to divide by classes. (pg. 329)

**46. 287c3-5:**

ΞΕ. Κατὰ μέλη τοίνυν αὐτὰς οἷον ἱερεῖον διαρῶμεθα,  
ἐπειδὴ δίχα ἀδυνατοῦμεν. δεῖ γὰρ εἰς τὸν ἐγγύτατα ὅτι  
μάλιστα τέμνειν ἀριθμὸν ἀεί. (5) (287c3-5)

Stranger: Then let's divide them limb by limb, like a sacrificial animal, since we can't do it into two. For we must always cut into the nearest number so far as we can. (pg. 330).

**47. 291e1-5:**

(e) ΞΕ. Πρὸς τὸ βίαιόν που καὶ ἐκούσιον ἀποσκοποῦντες  
νῦν καὶ πενίαν καὶ πλοῦτον καὶ νόμον καὶ ἀνομίαν ἐν αὐταῖς  
γινόμενα διπλῆν ἑκατέραν τοῖν δυοῖν διαιροῦντες μοναρχίαν  
μὲν προσαγορεύουσιν ὡς δύο παρεχομένην εἶδη δυοῖν ὀνόμασι,  
τυραννίδι, τὸ δὲ βασιλικῆ. (5) (291e1-5)

Stranger: I think that as things are people refer to the aspects of force and consent, poverty and wealth, and law and lawlessness as they occur in them, and use these to divide each of the first two types into two. So they call monarchy by two names, on the grounds that it exhibits two forms, the one ‘tyrannical,’ the other ‘kingly’ monarchy. (pg. 335)

**48. 302d6:**

NE. ΣΩ. Πῶς δῆ; καὶ τίτι διαιροῦντες ταύτην; (302d6)

Young Socrates: How, then? And dividing it by what criterion? (pg. 347)

***The Philebus:*<sup>152</sup>**

**49. 18b5-18d2:**

*Note: surrounding text has been included to provide context for discussion*

ΣΩ. Ἐπειδὴ φωνὴν ἄπειρον κατενόησεν εἴτε τις θεὸς  
εἴτε καὶ θεῖος ἄνθρωπος—ὡς λόγος ἐν Αἰγύπτῳ Θεῦθ τινα  
τοῦτον γενέσθαι λέγων, ὃς πρῶτος τὰ φωνήεντα ἐν τῷ  
ἀπείρῳ κατενόησεν οὐχ ἐν ὄντα ἀλλὰ πλείω, καὶ πάλιν  
(c) ἕτερα φωνῆς μὲν οὐ, φθόγγου δὲ μετέχοντά τινος, ἀριθμὸν  
δέ τινα καὶ τούτων εἶναι, τρίτον δὲ εἶδος γραμμάτων διε-  
στήσατο τὰ νῦν λεγόμενα ἄφωνα ἡμῖν· τὸ μετὰ τοῦτο διήρει  
τά τε ἄφθογγα καὶ ἄφωνα μέχρι ἐνὸς ἐκάστου, καὶ τὰ φωνή-

---

<sup>152</sup> Translations by Dorothea Frede (cited under Plato in Works Cited), with modifications.

εντα καὶ τὰ μέσα κατὰ τὸν αὐτὸν τρόπον, ἕως ἀριθμὸν αὐτῶν (5)

λαβῶν ἐνὶ τε ἐκάστῳ καὶ σύμπασι στοιχεῖον ἐπωνόμασε·

καθορῶν δὲ ὡς οὐδεὶς ἡμῶν οὐδ' ἂν ἐν αὐτὸ καθ' αὐτὸ ἄνευ

πάντων αὐτῶν μάθοι, τοῦτον τὸν δεσμὸν αὖ λογισάμενος ὡς

(d) ὄντα ἓνα καὶ πάντα ταῦτα ἓν πως ποιοῦντα μίαν ἐπ' αὐτοῖς

ὡς οὕσαν γραμματικὴν τέχνην ἐπεφθέγγετο προσειπῶν. (18b5-18d2)

Socrates: The way some god or god-inspired man discovered that vocal sound is unlimited, as tradition in Egypt claims for a certain deity called Theuth. He was the first to discover that the vowels in that unlimited variety are not one but several, and again that there are others that are not voiced, but make some kind of noise, and that they, too, have a number. As a third kind of letters he established the ones we now call mute. After this he further subdivided the ones without sound or mutes down to every single unit. In the same fashion he also dealt with the vowels and the intermediates, until he had found out the number for each one of them, and then he gave all of them together the name “letter.” And as he realized that none of us could gain any knowledge of a single one of them, taken by itself without understanding them all, he considered that the one link that somehow unifies them all and called it the art of literacy. (pg. 406)

**50. 20a5-8:**

ΠΡΩ. ... βουλευού δὴ πρὸς ταῦτα αὐτὸς πότερον ἡδονῆς (5)  
εἶδη σοι καὶ ἐπιστήμης διαιρετέον ἢ καὶ ἐατέον, εἴ πη καθ'  
ἕτερόν τινα τρόπον οἷός τ' εἶ καὶ βούλει δηλῶσαί πως ἄλλως  
τὰ νῦν ἀμφισβητούμενα παρ' ἡμῖν. (20a5-8)

Protarchus: ...It is up to you to decide whether for this purpose you need to divide off different kinds of pleasure and knowledge or can leave that out, if you are able and willing to show some other way to settle the issues of our controversy. (pg. 407)

**51. 20c4-6:**

ΣΩ. Τῶν δέ γε εἰς τὴν διαίρεσιν εἰδῶν ἡδονῆς οὐδὲν ἔτι  
προσδεησόμεθα κατ' ἐμὴν δόξαν. προῖόν δ' ἔτι σαφέστερον (5)  
δείξει. (20c4-6)

Socrates: So we will not have to worry any longer, I think, about the division of the kinds of pleasure. But further progress will show this more clearly. (pg. 408)

**52. 48d6:**

ΣΩ. Λέγεις δὴ δεῖν ἐμὲ τοῦτο διελέσθαι τὰ νῦν; (48d6)

Socrates: Are you saying that it is up to me to make this division<sup>153</sup> now? (pg. 438)

**53. 49a7-9:**

ΣΩ. Τοῦτο τοίνυν ἔτι διαιρετέον, ὦ Πρώταρχε, δίχα, εἰ μέλλομεν τὸν παιδικὸν ἰδόντες φθόνον ἄτοπον ἡδονῆς καὶ λύπης ὄψεσθαι μεῖζιν. (49a7-9)

Socrates: So we must continue with our division of ignorance, Protarchus, if we want to find out what a strange mixture of pleasure and pain this comic malice is. (pg. 438)

**54. 49b6-49c1:**

ΣΩ. Ταύτη τοίνυν διέλε, καὶ ὅσοι μὲν αὐτῶν εἰσι μετ' ἀσθενείας τοιοῦτοι καὶ ἀδύνατοι καταγελάμενοι τιμωρεῖσθαι, γελοίους τούτους φάσκων εἶναι τᾶληθῆ φθέγγη· τοὺς δὲ δυνατοὺς τιμωρεῖσθαι καὶ ἰσχυροὺς φοβεροὺς καὶ ἐχθροὺς (c) προσαγορεύων ὀρθότατον τούτων σαυτῷ λόγον ἀποδώσεις. (49b6-49c1)

Socrates: So make this the point of division. All those who combine

---

<sup>153</sup> i.e., the division of the disposition of not knowing oneself



this delusion with weakness and are unable to avenge themselves when they are laughed at, you are justified in calling ridiculous. But as for those who do have the power and strength to take revenge, if you call them dangerous and hateful, you are getting exactly the right conception about them. (pg. 439)

**APPENDIX B:**

**Definitions Produced by Collection and Division**

***The Phaedrus:*<sup>154</sup>**

**Definition of love:**

**1. 265a6-7:**

ΣΩ. ... μανίαν γάρ τινα ἐφήσαμεν εἶναι  
τὸν ἔρωτα. (265a6-7)

Socrates: ... We did say that love is a kind of madness. (pg. 541)

***The Sophist:*<sup>155</sup>**

**Definition of the angler:**

**2. 221b2-221c3:**

ΞΕ. ... συμπάσης γὰρ τέχνης  
τὸ μὲν ἥμισυ μέρος κτητικὸν ἦν, κτητικοῦ δὲ χειρωτικόν,

---

<sup>154</sup> Translation by A. Nehamas and P. Woodruff (cited under Plato in Works Cited), with modifications.

<sup>155</sup> Translations by Nicholas P. White (cited under Plato in Works Cited), with modifications.

χειρωτικοῦ δὲ θηρευτικόν, τοῦ δὲ θηρευτικοῦ ζωοθηρικόν,  
 ζωοθηρικοῦ δὲ ἐνυγροθηρικόν, ἐνυγροθηρικοῦ δὲ τὸ κάτωθεν (5)  
 τμήμα ὅλον ἀλιευτικόν, ἀλιευτικῆς δὲ πληκτικόν, πληκ-  
 τικῆς δὲ ἀγκιστρευτικόν· τούτου δὲ τὸ περὶ τὴν κάτωθεν  
 (c) ἄνω πληγὴν ἀνασπωμένην, ἀπ’ αὐτῆς τῆς πράξεως ἀφομοιωθὲν  
 τοῦνομα, ἢ νῦν ἀσπαλιευτικὴ ζητηθεῖσα ἐπίκλην  
 γέγονεν. (221b2-221c3)

Stranger: ... For of art as a whole one half was acquisitive; half of the acquisitive was coercive; half of the coercive was hunting; half of hunting was animal-hunting; half of animal-hunting was aquatic hunting; all of the lower portion of aquatic hunting was fishing; half of fishing was hunting by striking; and half of striking was hooking. And the part of hooking that involves a blow drawing a thing upward from underneath is called by a name that's derived by its similarity to the action itself, that is, it's called draw-fishing or angling – which is what we're searching for. (pg. 241)

### Definitions of the sophist:

#### 3. Definition 1 (223b1-7):

(b) ΞΕ. Κατὰ δὴ τὸν νῦν, ὃ Θεαίτητε, λόγον, ὡς ἔοικεν,  
 ἢ τέχνης οἰκειωτικῆς, <χειρωτικῆς>, [κτητικῆς,] θηρευτικῆς,

ζωοθηρίας, [πεζοθηρίας,] χειρσαίας, [ήμεροθηρικῆς,] ἀνθρωποθηρίας, <πιθανοθηρίας>, ἰδιοθηρίας, [μισθαρνηκῆς,] νομισματοπωλικῆς, δοξοπαιδευτικῆς, νέων πλουσίων καὶ ἐνδόξων (5) γιγνομένη θήρα προσρητέον, ὡς ὁ νῦν λόγος ἡμῖν συμβαίνει, σοφιστική. (223b1-7)

Stranger: So according to our account now, Theaetetus, it seems that this sort of expertise belongs to appropriation, taking possession, hunting, animal-hunting, hunting on land, human hunting, hunting by persuasion, hunting privately, and money-earning. It's the hunting of rich, prominent young men. And according to the way our account has turned out, it's what should be called the expertise of the sophist (pg. 243).

#### 4. Definition 2 (224c9-224d2):

ΞΕ. ... ἴθι δὴ νῦν συναγάγωμεν αὐτὸ λέγοντες ὡς τὸ τῆς κτητικῆς, μεταβλητικῆς, ἀγοραστικῆς, (10) (d) ἐμπορικῆς, ψυχεμπορικῆς περὶ λόγους καὶ μαθήματα ἀρετῆς πωλητικὸν δεύτερον ἀνεφάνη σοφιστική. (224c9-224d2)

Stranger: ...Come on now and let's collect it all together. We'll say that the expertise of the part of acquisition, exchange, selling, wholesaling, and soul-wholesaling, dealing in words and learning

that have to do with virtue – that’s sophistry in its second appearance (pg. 245).

**5. Definition 3 (224d4-7):**

ΞΕ. Τρίτον δέ γ’ οἶμαι σε, κἂν εἴ τις αὐτοῦ καθιδρυμένος ἐν πόλει, τὰ μὲν ὠνούμενος, τὰ δὲ καὶ τεκταινόμενος αὐτὸς (5) μαθήματα περὶ τὰ αὐτὰ ταῦτα καὶ πωλῶν, ἐκ τούτου τὸ ζῆν προυτάξατο, καλεῖν οὐδὲν ἄλλο πλὴν ὅπερ νυνδὴ. (224d4-7)

Stranger: In the third place I think you’d call somebody just the same thing if he settled here in the city and undertook to make his living selling those same things, both ones that he’d bought and ones that he’d made himself. (pg. 245)

**6. Definition 4 (224e1-4):**

(e) ΞΕ. Καὶ τὸ κτητικῆς ἄρα μεταβλητικόν, ἀγοραστικόν, καπηλικόν εἴτε αὐτοπωλικόν, ἀμφοτέρως, ὅτιπερ ἂν ἦ περὶ τὰ τοιαῦτα μαθηματοπωλικόν γένος, αἰεὶ σὺ προσερεῖς, ὡς φαίνη, σοφιστικόν. (224e1-4)

Stranger: So apparently you’ll still say that sophistry falls under acquisition, exchange, and selling, either by retailing things that others make or

by selling things that he makes himself. It's the retail sale of any learning that has to do with the sorts of things we mentioned. (pg. 245)

**7. Definition 5 (226a1-4):**

(a) ΞΕ. Οὐδὲν ἄλλ' ἢ τὸ χρηματιστικὸν γένος, ὡς ἔοικεν, ἐριστικῆς ὄν τέχνης, τῆς ἀντιλογικῆς, τῆς ἀμφισβητητικῆς, τῆς μαχητικῆς, τῆς ἀγωνιστικῆς, τῆς κτητικῆς ἔστιν, ὡς ὁ λόγος αὖ μεμήνυκε νῦν, ὁ σοφιστής. (226a1-4)

Stranger: It seems his type is precisely the money-making branch of expertise in debating, disputation, controversy, fighting, combat, and acquisition. According to what our account shows us now, that's the sophist. (pg. 246)

**8. Definition 6 (231b3-231b8):**

ΞΕ. Ἐστω δὴ διακριτικῆς τέχνης καθαρτική, καθαρτικῆς δὲ τὸ περὶ ψυχὴν μέρος ἀφωρίσθω, τούτου δὲ διδασκαλική, διδασκαλικῆς δὲ παιδευτική· τῆς δὲ παιδευτικῆς ὁ περὶ τὴν (5) μάταιον δοξοσοφίαν γιγνόμενος ἔλεγχος ἐν τῷ νῦν λόγῳ παραφανέντι μηδὲν ἄλλ' ἡμῖν εἶναι λεγέσθω πλὴν ἢ γένει γενναία σοφιστική. (231b3-231b8)

Stranger: So let it be the cleansing part of the expertise of discriminating things; and let it be marked off as the part of that which concerns souls; and within that it's teaching; and within teaching it's education. And let's say that within education, according to the way the discussion has turned now, the refutation of the empty belief in one's own wisdom is nothing other than our noble sophistry. (pg. 251)

**9. Definition 7 (268c8-268d4):**

ΞΕ. Τὸ δὴ τῆς ἐναντιοποιολογικῆς εἰρωνικοῦ μέρους τῆς δοξαστικῆς μιμητικόν, τοῦ φανταστικοῦ γένους ἀπὸ τῆς (d) εἰδωλοποικῆς οὐ θεῖον ἀλλ' ἀνθρωπικὸν τῆς ποιήσεως ἀφορισμένον ἐν λόγοις τὸ θαυματοποικὸν μόριον, “ταύτης τῆς γενεᾶς τε καὶ αἵματος” ὃς ἂν φῆ τὸν ὄντως σοφιστὴν εἶναι, τάλιθέστατα, ὡς ἔοικεν, ἐρεῖ. (268c8-268d4)

Stranger: Imitation of the contrary-speech-producing, insincere and unknowing sort, of the appearance-making kind of copy-making, the word-juggling part of production that's marked off as human and not divine. Anyone who says the sophist is of this “blood and family” will be saying, it seems, the complete truth.

*The Statesman*:<sup>156</sup>**10. Definition 1 (267a8-267c3):**

ΞΕ. Τῆς γνωστικῆς τοίνυν ἐπιστήμης ἡμῖν ἦν κατ' ἀρχὰς μέρος ἐπιτακτικόν· τούτου δὲ ἀπεικασθὲν τὸ μόνιον αὐτεπι-  
 (b) τακτικὸν ἐρρήθη. ζωοτροφικὴ δὲ πάλιν αὐτεπιτακτικῆς οὐ τὸ σμικρότατον τῶν γενῶν ἀπεσχίζετο· καὶ ζωοτροφικῆς εἶδος ἀγελαιοτροφικόν, ἀγελαιοτροφικοῦ δ' αὖ πεζονομικόν· τοῦ δὲ πεζονομικοῦ μάλιστα ἀπετέμνετο τέχνη τῆς ἀκεράτου φύσεως θρεπτική. ταύτης δ' αὖ τὸ μέρος οὐκ ἔλαττον τριπλοῦν (5) συμπλέκειν ἀναγκαῖον, ἂν εἰς ἓν τις αὐτὸ ὄνομα συναγαγεῖν βουληθῆ, γενέσεως ἀμείκτου νομευτικὴν ἐπιστήμην προσ-  
 (c) αγορεύων. τὸ δ' ἀπὸ τούτου τμήμα, ἐπὶ ποιμνῆ δίποδι μέρος ἀνθρωπονομικὸν ἔτι λειφθὲν μόνον, τοῦτ' αὐτὸ ἐστὶν ἤδη τὸ ζητηθέν, ἅμα βασιλικὸν ταῦτὸν κληθὲν καὶ πολιτικόν.  
 (267a8-267c3)

Stranger: Well then: of theoretical knowledge, we had at the beginning a directive part; and of this, the section we wanted was by analogy said to be 'self-directing.' Then again, rearing of living creatures, not the smallest of the classes of self-directing knowledge, was split off from it; then a herd-rearing form from rearing of living creatures, and from that, in turn,

<sup>156</sup> Translations by C.J. Rowe (cited under Plato in Works Cited), with modifications.



rearing of what goes on foot; and from that, as the relevant part, was cut off the expertise of rearing the hornless sort. Of this in turn the part must be woven together as not less than triple, if one wants to bring it together into a single name, calling it knowledge of rearing of non-interbreeding creatures. The segment from this, a part relating to a two-footed flock, concerned with rearing of human beings, still left on its own – this very part is now what we were looking for, the same thing we call both kingly and statesmanlike. (pg. 308)

#### 11. Definition 2 (311b7-311c6):

ΞΕ. Τοῦτο δὴ τέλος ὑφάσματος εὐθυπλοκία συμπλακὲν γίνεσθαι φῶμεν πολιτικῆς πράξεως τὸ τῶν ἀνδρείων καὶ σωφρόνων ἀνθρώπων ἦθος, ὁπότεν ὁμονοία καὶ φιλία κοινὸν (c) συναγαοῦσα αὐτῶν τὸν βίον ἢ βασιλικὴ τέχνη, πάντων μεγαλοπρεπέστατον ὑφασμάτων καὶ ἄριστον ἀποτελέσασα [ὥστ' εἶναι κοινόν] τοὺς τ' ἄλλους ἐν ταῖς πόλεσι πάντας δούλους καὶ ἐλευθέρους ἀμπίσχουσα, συνέχη τούτῳ τῷ πλέγματι, καὶ καθ' ὅσον εὐδαίμονι προσήκει γίνεσθαι πόλει (5) τούτου μηδαμῆ μηδὲν ἐλλείπουσα ἄρχη τε καὶ ἐπιστατῆ.

(311b7-311c6)

Stranger: Then let us say that this marks the completion of the fabric which is the product of the art of statesmanship: the weaving together, with regular intertwining, of the dispositions of brave and moderate people – when the expertise belonging to the king brings their life together in agreement and friendship and makes it common between them, completing the most magnificent and best of all fabrics and covering with it all the other inhabitants of cities, both slave and free; and holds them together with this twining and rules and directs without, so far as it belongs to a city to be happy, falling short of that in any respect. (pg. 358)