

PhD. 26193

# Studies in Historia



This dissertation is submitted for the degree of  
Doctor of Philosophy,

by

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To my grandfather,  
Eiríkur Axel Jónsson 1919–2002.

ὄλβιος ὅστις τῆς ἱστορίας ἔσχε μάθησιν  
Euripides.

## Preface

This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.

This dissertation does not exceed 80.000 words, excluding bibliography.



## Contents

Acknowledgements	1
Summary	2
Introduction	3
1. The status of ἱστορία	4
2. Concepts and histories	10
3. Overview	14
I. The Histôr in Historia	17
1. Earliest uses of ἱστωρ	20
2. Heraclitus and Plato's <i>Cratylus</i>	25
3. Some tragic problems	29
4. HerHist I, proem etc.	32
5. New-Simonides on Plataea	38
6. Herodotus the logios	45
7. Herodotus' proem and Hecataeus FGrH I, F1	50
8. Herodotus' proem and Thucydides' ditto	54
9. The fame, the shame: the tomb	57
II. Reported Knowledge	59
1. Oratory, poetry and ἱστορία: the use of examples	62
2. Herodotus on his and others' ἱστορεῖν	70
3. The monumental Nile	75
4. Heracles and Helen	79
5. Medicine, history and the history of medicine	90
6. The bookish empiricism of the Empiricists	99
7. "Empiricism" from Herodotus to the Empiricists	106

III. Observing Chicks	108
1. Analogy and the invisible	110
2. Arguments by ἱστορία	115
3. 'Ιστορίον, τεκμήριον, μαρτύριον and σημήλιον	120
4. Chicks and foetuses	122
5. Aristotle the experimentalist	126
6. Observation and theory	131
7. 'Ιστορία and zoological demonstrations	136
8. Transit	142
IV. Nature Investigated	144
1. Living nature and explanation	145
Part I	
2. 'Ιστορία and ἐπιστήμη of nature	150
3. On the eternity of the world	157
4. Arguments and counterarguments in frg. 184	163
Part II	
5. Theophrastus in the shadow of Aristotle	167
6. "As I said in the <i>Histories</i> "	170
7. The sources of the <i>Histories</i>	179
8. Animals and plants as objects of <i>Historiae</i>	187
9. Location, cultivation and the classification of plants	193
10. Conclusion	198
Conclusion	200
1. Variety	201
2. Minting	203
3. ἱστορία	205
Abbreviations	208
Bibliography	211

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I dedicate this work to my grandfather, who promised to live long enough to see me finish — but sadly died in August.

## Summary

This dissertation consists of four chapters plus introduction and conclusion. Each chapter is an independent study of some of the uses and meanings of the ἱστορ- vocabulary in Archaic and Classical Greek literature, excluding tragedy.

In the Introduction the theme of the dissertation is introduced and the two methodological approaches relied on, Cambridge history of ideas and *Begriffsgeschichte*, are discussed.

Chapter I deals with the earliest available material, with particular emphasis on the proem of Herodotus' *Histories*. Among the questions it tries to answer is whether any of the early uses of the ἱστορ- vocabulary gives a key to Herodotus' use of ἱστορίη.

Chapter II takes a closer look at Herodotus' practice in the *Histories* by analysing his uses of ἱστορίη and ἱστορεῖν. These uses are largely confined to book II, the Egyptian logos. This chapter also deals with the uses of the ἱστορ- vocabulary in some of the medical writings, particularly *On Ancient Medicine* and the Hellenistic sect known as the Empiricists.

Chapter III is a detailed enquiry into the uses of the ἱστορ- vocabulary in the only treatises of the Hippocratic collection that use it to any substantial degree: *On Generation*, *On the Nature of the Child* and *Diseases* IV. This material is compared with Aristotle's treatment of the same "embryological" problems in his zoological treatises and the question about the relation of observation and theory is discussed.

Chapter IV takes a closer look at Aristotle's *Historia Animalium*, comparing it to Theophrastus' *Historia Plantarum*. The first half of the chapter concerns the status of living nature, the sublunary world, in the cosmology of Aristotle and Theophrastus.

In the Conclusion I briefly pull together some of the main threads of the dissertation.

## Introduction

*Alle Begriffe, in denen sich ein ganzer Proceß semiotisch  
zusammenfaßt, entziehen sich der Definition; definierbar ist nur das,  
was keine Geschichte hat.*

Friedrich Nietzsche *Zur Genealogie der Moral*

I could spend the rest of my life studying ἱστορία.<sup>1</sup> But why do it at all? The simple answer is: because it is an important concept. Important for what, and why? It is important in and for the knowledge industry because it is among the fundamental concepts in the debate about the nature and acquisition of knowledge from the ancient Greeks to our day. Someone might claim that if we did not have "History", it would have to be invented. The ancient Greeks did. But at that time it did not obviously have to be invented. ἱστορία was not the same for them as History is to us. My enquiry is about the melting pot from

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<sup>1</sup> I use the Attic form ἱστορία when referring to the concept in general, and it should be understood to include the Ionic ἱστορίη as well.

which this concept was minted and the minting itself. 'Ιστορία has the special feature of being among words, like φιλοσοφία, which are used as names for a certain kind — or certain kinds — of knowledge in this debate. It is not only the name of History, as we use it today, but more generally of the world *as described*. For an extremely inductive approach— like Bacon's — history is the foundation of all knowledge. It has thus a special affinity with the rise and development of empiricism. In antiquity, as well as in modern scholarship about antiquity, it is often used to name *empirical* knowledge in distinction from *speculative* knowledge. It is description either *as* explanation, as *opposed to* explanation or as what comes *before* explanation.

### 1. The status of ἱστορία.

Herodotus, the "Father of History", opens his magnum opus by referring to his whole work as a presentation of his ἱστορίη. Thucydides never uses the term, probably in opposition to Herodotus. In Plato's dialogue the *Phaedo* Socrates gives a brief account of his intellectual biography to explain the kind of causal enquiry he is engaged in, trying to prove the immortality of the soul. As a young man he was keen on the wisdom, σοφία, "they call inquiry into nature", καλοῦσι περὶ φύσεως ἱστορίαν (96a7-8).<sup>2</sup> This kind of wisdom was able to give a physical explanation of how Socrates could sit, as he was at the time, waiting for the hemlock he had been sentenced to drink. But it could not give an explanation of *why* he was, or should be, sitting there. What purpose did it

<sup>2</sup> This phrase is also used by Aristotle in *de Caelo* 298b2, where he argues that ἡ περὶ φύσεως ἱστορία has bodies, σώματα, primarily as objects. Euripides frg. 910 also associates ἱστορία

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serve? This question was not only relevant to Socrates' situation but to the study of nature and everything else in general. Socrates wanted to know what was the best for each individual thing and what was the best common to all (98a-b), and his dissatisfaction with what they call *περὶ φύσεως ἱστορία* is that it does not try to answer this fundamental question. He, therefore, turned his attention away from perception, *αἴσθησις*, and towards *λόγοι* (99e), and this involved hypothesising the good and the beautiful to explain causes (100a-b).

The author of the Hippocratic treatise *On Ancient Medicine* criticises in general the intrusion of the method of hypothesis into the well-established *τέχνη* of medicine. To claim that health and disease can be explained on the basis of the hot and the cold, the wet and the dry is not only a simplification. It is an unnecessary simplification, as medicine has, through its development from time immemorial, gathered so much information about what causes diseases and health that there is no need to base medicine on postulated principles. He goes on to describe the method of hypothesis as leading to *φιλοσοφίη*, while he refers to the cumulated and cumulating knowledge of the real craft of medicine as *ἱστορίη* (ch. 20). Aristotle, in discussing the nature of tragedy, contrasts poetry (and tragedy is poetry) with *ἱστορία*, by which he means History. Poetry is more general and, therefore, worthier and more philosophical (*φιλοσοφώτερος*) than *ἱστορία* (*Poetics* ch. 9). In his own zoological investigations *ἱστορία* comes before demonstration (*ἀπόδειξις*), and there is no demonstration before there is a *ἱστορία* of what is to be demonstrated. *Ἱστορία* does not necessarily *mean* the same in these two instances, but it shares some essential characteristics: it is a description of the facts. It is important not to underestimate that he uses the same term to refer to

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with *φύσις*. Isocrates' *Panathenaicus* 246 confirms that *ἱστορία* and *φιλοσοφία* were at the



what we recognise as "History" and "Natural History" — however we understand *these* terms. Later there were also attempts at philosophising history, as is evident from the well known phrase of Dionysius from Halicarnassus, paraphrasing Thucydides' dictum that his account of the Peloponnesian war is to be a possession for ever as: ἱστορία φιλοσοφία ἐστὶν ἐκ παραδειγμάτων.

From this brief review of some striking discussions it is obvious how ἱστορία gains status as a concept expressing a kind of knowledge, in opposition to φιλοσοφία and the method of hypothesis. 'Ἱστορία is therefore usually, in the context of ancient philosophy and science, taken to refer to an enquiry of an empirical sort. And this is indeed one of its principal uses. This concept could be what a study of ἱστορία, like my own, is about. It would make it an enquiry into the development and nature of empirical enquiry in ancient Greece. I would have to start from a concept of enquiry and look for it in the textual material I am working with. To ease the teleological strain I could try to identify the concept of enquiry through uses of ἱστορία in Greek literature, texts where it is used for enquiry. But here the teleological trap comes in again: ἱστορία is not always, and not even usually, used for enquiry and even where it is used to refer to some sort of enquiry there are many different concepts on offer. Should Herodotus be our primary example? The Hippocratics? Aristotle? Depending on the disposition of the interpreter, each of these authors, or groups of authors, has been claimed as the most important "empiricist" in antiquity, if not the "father of empiricism".<sup>3</sup> This approach is legitimate and can be done with sophistication.<sup>4</sup> It would not be a study of

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time clearly distinguished and easily recognised categories.

<sup>3</sup> D. Müller (1981) on Herodotus, Farrington (1949) on Hippocratics, Barnes (1986) 86 on Aristotle.

<sup>4</sup> I would in particular like to mention the works of Geoffrey Lloyd on ancient Greek science, for example "The development of empirical research" in Lloyd (1979) and (2002). But even

ἱστορία, but a study of a concept, or a cluster of concepts, ἱστορία, among other words, is used to express. To figure out what that cluster is to contain, whether it should contain the vocabulary of questioning — as ἱστορεῖν usually means "to ask" — as well as the vocabulary of enquiring and describing, depends on what concept of ἱστορία we adopt or emphasise. By concentrating on ἱστορία itself I hope to show how a distinctively Greek concept developed in the boiling epistemological debate of archaic and classical Greece. The varieties of its uses and what it is defined and used against also shows important aspects of Greek ways of enquiring into and describing the world, or that part of it which is being studied and debated.

I will, therefore, focus on uses of the word ἱστορία and cognates. But this can be done in many ways. One is to approach it linguistically, either through the stem and root of ἱστορία (ἵστωρ and *id* respectively (on the standard account)) or on the lines of John Lyons' *Structural Semantics* (1963). The etymological approach has been favoured by scholars such as Snell and von Fritz (apart from Indo-European linguists such as Benveniste and Frisk) and more recently by Gregory Nagy, who explains the use of ἱστορίη in Herodotus as an application of the archaic model of ἵστωρ, an "arbitrator". This approach has its uses, but also severe limitations, and I discuss this in chapter II.<sup>5</sup> John Lyons is more promising. In his PhD work, published as *Structural Semantics*, he studies the "meaning relations", i.e. relations that generate the meaning of the terms — or linguistic units — in a language, of certain key

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Lloyd seems to take ἱστορία for granted: "As we said at the outset, popular and traditional beliefs — including superstitions and 'magic' — were not superseded: they continued to be held not only (one presumes) by most Greeks but in particular by many highly articulate writers and they can be exemplified in prominent exponents of ἱστορίη like Herodotus." Lloyd (1979) 227.

<sup>5</sup> What we know about the knowledge of etymology in ancient Greece, for instance from Plato's *Cratylus*, should make us wary of assuming that the Greeks knew anything about the true etymology of words.

words in the dialogues of Plato. The most important relations in general are: incompatibility, autonomy, hyponymy and synonymy as well as the "relation of consequence", which is particularly important in an epistemological context. Applying this to ἱστορία would, for instance, show that in Herodotus ἐπιστήμη can be a consequence of ἱστορίη (cf. II 118, 1; 119, 3), but not in Aristotle. Ἱστορία means, therefore, on Lyons' account different things in Herodotus and Aristotle, because the "relation of consequence" is different for the two authors. While I hope to show some of the same things as Lyons' approach would this is not a linguistic study. I am not only interested in mapping the meaning of ἱστορία in the key authors that use the term and to see how these change between authors and through time, but also to see their use in the broader cultural context. I cast my net wider than Lyons does.

Another approach typically used in studying ἱστορία is to write its history leading to History. Gerard Press' *The Development of the Idea of History in Antiquity* (1982) has ultimately this agenda.<sup>6</sup> One of his initial methodological statements is that we should not ask "What ideas have people had about (the unstable referent of the term) 'history'?" but rather "What different referents has the term 'history' had for these different agents and cultures?" (p. 16) And further: "An examination of the uses of the ancient Greek words ἱστορεῖν, ἱστορία, ἱστορικός and their ancestor, ἵστωρ, and the ancient Latin words *historia* and *historicus* will reveal what the term "history" in its various linguistic forms was taken to mean." (p. 17) So far, so good. But Press betrays his hand on page 19, where he spells out his purpose in three steps: "(1) to study the term "history" as a member of the Greek, Latin, and hence of our own intellectual vocabulary; (2) to determine, through the study of the term, the content and development of the idea of history in antiquity; and

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<sup>6</sup> So does Sauge's *De l'épopée à l'histoire*, culminating in Herodotus.

(3) through the determination of the history of the idea of history, to learn something about the cultural transformation of the ancient world (a) as a detailed study of the specifically intellectual relationship between Graeco-Roman and Judeo-Christian cultures and (b) as a re-examination of the popular linear-cyclic account of the idea of history in the two cultures." It thus turns out not to be a study of the term or concept of ἱστορία at all, but a study of the development of the idea of History in antiquity. This should not come as a surprise, as this is what the title of the book states. But is there not a conflict between the method and the aim? It is obvious that ἱστορία becomes the name for History. Already Aristotle in the *Poetics* uses the word ἱστορία to refer to the writings of Herodotus (and probably Thucydides). Enquiring into the uses of ἱστορία and cognates in antiquity is thus highly relevant to a study of the development of the idea of History. It is still a different study. 'ἱστορία is used in a great variety of contexts, some of which are almost completely left out in Press' account. It is, for instance, a fundamental term in medicine, both Classical and Hellenistic. This hardly gets a mention in Press' book. There is thus a conflict between the aim and the methodology. Press misses for instance the important connection between History and the uses of ἱστορία in medicine to refer to knowledge from the past of medicine, both in the Hippocratic treatise *On Ancient Medicine* and in the later Hellenistic medical sect known as the Empiricists. Another less important, but telling, mistake is in claiming that Herodotus used the terms ἱστορεῖν, ἱστορία and ἱστορικός.<sup>7</sup> Herodotus only uses the first two. This is surely a slip on Press' part, but it shows that the teleological nature of his approach makes him less sensitive to nuances, both great and small, in the development and history of ἱστορία and cognates. Aristotle, again in the *Poetics*, is the first, as far as we know, to use the term

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<sup>7</sup> Press (1982) 20 n 48.

ιστορικός, in the same chapter where he, also as the first as far as we know, refers to History by ιστορία.<sup>8</sup>

## 2. Concepts and histories.

I have mainly been influenced by two methodological approaches. The first is Cambridge style history of ideas, as argued for and practiced by Quentin Skinner and Geoffrey Lloyd, but also John Dunn and J.G.A. Pocock. The second is German style history of concepts, *Begriffsgeschichte*, mainly associated with Reinhart Koselleck<sup>9</sup> and, for the philosophical part of the project, Joachim Ritter<sup>10</sup>. I emphasise, on the one hand, reading texts in context<sup>11</sup> and, on the other, concentrating on concepts, or, as in my case, a single concept. Both these traditions arise in opposition to careless ascription of concepts from the present to the past. Koselleck describes the genesis of *Begriffsgeschichte*, which for him mainly concerns political history, thus:<sup>12</sup>

First, it began as a critique of a careless transfer to the past of modern, context-determined expressions of constitutional argument, and second, it directed itself to criticizing the practice in the history of ideas of treating ideas as constants, articulated in differing historical figures but of themselves fundamentally unchanging.

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<sup>8</sup> I discuss this in chapter II, but without going into the development of historiography after Aristotle. In particular the nature of description and explanation in the development of historiography takes on many different forms, one of which is according to an Aristotelian model of explanation. But see Walbank (1960).

<sup>9</sup> Chief editor of *Geschichtliche Grundbegriffe*.

<sup>10</sup> Editor of *Historische Wörterbuch der Philosophie*. See Röttgers (1991).

<sup>11</sup> Cf. Dunn (1968); Skinner (1969); Lloyd (1990) 1-14; (1996) 1-19. See Prudovsky (1997), who argues that Lloyd is a more radical version of Skinner.

<sup>12</sup> Koselleck (1985) 80.

What distinguishes *Begriffsgeschichte* from Cambridge history of ideas is the understanding of what a "concept" or *Begriff* is. As usually understood in English scholarship a concept is something expressed in words and if the same word has different meanings in different contexts it expresses different concepts. By "concept" (*Begriff*) Koselleck means something different (*ibidem*):

a word becomes a concept when the plenitude of a politicosocial context of meaning and experience in and for which a word is used can be condensed into one word.

Some special words have the status of being concepts, or even fundamental concepts (*Grundbegriffe*). They become this through a historical process. This understanding of what a concept is opens up the possibility of writing the history of concepts. The connection between concepts and words is thus much stronger according to this theory than is usually assumed in philosophical discourse, and this explains the different emphases between *Begriffsgeschichte* and Cambridge history of ideas. In *Begriffsgeschichte* the stress is on the diachronic and not the synchronic.

Lloyd's version of the history of ideas approaches *Begriffsgeschichte* to a significant degree. Here he is discussing the usefulness of the category of magic in interpreting ancient cultures:<sup>13</sup>

The question, then, of how the actors themselves perceive their own activity, or the conventions within which it fits or from which it deviates, the traditions that do or do not sanction it, are prior to and independent of the question of the

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<sup>13</sup> Lloyd (1990) 69 emphasis mine.

existence of some such category as magic itself. But once that category exists, it can hardly fail to change the perception. In that sense — as with the category of the metaphorical — the question of the availability of the *explicit category* is a crucial one: for the category enabled the challenge to justify the activity to be pressed. Once again an issue was forced, by that challenge, and the activity could no longer remain, or could not do so easily, an unquestioned item invisible — or indistinctive — against the background of the traditions to which it belonged. Conversely it is also clear that, in the absence of the category, the answers to the questions of the relationships between the activities and the beliefs that we might label 'magic' and the culture within which they fit will inevitably be multifarious and diffuse.

A category can only be made explicit with a word to express it in. Concerning the category of magic, the words *μῦθος* and *μαγία*, which Lloyd discusses, are fundamental tools in the epistemological debate in ancient Greece. It is imperative, according to Lloyd, that these categories should not be taken at face value but rather understood in the context in which they are brought forward. This goes for *ἱστορία*, as any other fundamental concept:<sup>14</sup>

What those Greek scientists who advocated *historia* did was just that, to *advocate* empirical research self-consciously. Again informal testing procedures and techniques of argument are, we might say, as old as the human race. What the Greeks did was to insist explicitly on testing and verifiability, and to carry out the first explicit formal analysis of schemata of argument.

But this making of methods, arguments, categories *explicit* was no trivial matter. The weapons the proponents of *logos* self-consciously deployed against others — in some cases invented to use against others — could be, and were, turned against themselves.



The importance of explicit categories, or concepts, for the possibility of dialogue and argument — both within the material we are studying and between the interpreter and the interpreted — in political and scientific debates is crucial. It is also important not to assume that our categories, or concepts, map neatly on to the material we are interpreting.

Scholars like Skinner, Pocock and Lloyd cannot imagine concepts having histories.<sup>15</sup> If a term like *ιστορία* has different meanings in different contexts, the term expresses different concepts. Strictly speaking a concept only exists in particular speech acts, as ideas only exist in individuals and their communicative performances. Against this Koselleck stresses that a choice of words can not be made apart from knowledge of their histories (Koselleck (1996) 63:

No author can create something new without reaching back to the established corpus of the language, to those linguistic resources created diachronically in the near or more remote past and shared by all speakers or listeners.

The synchronic analysis cannot be separated from the diachronic analysis (Koselleck (1985) 89):<sup>16</sup>

A concept is not simply indicative of the relations which it covers; it is also a factor within them. Each concept establishes a particular horizon for potential experience and conceivable theory, and in this way sets a limit.

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<sup>14</sup> Lloyd (1990) 70.

<sup>15</sup> This is explicitly argued by Skinner (1988) and, following him, by Pocock (1996) 52-56. Only Pocock is arguing against Koselleck's *Begriffsgeschichte*. See also Cartledge (2001) 69.

<sup>16</sup> Pocock (1996) insists on the priority of the synchronic over the diachronic. Concepts, according to him, only exist in particular arguments.



Basic concepts (*Grundbegriffe*), like ἱστορία, make verbal interaction, among them interpretation and analysis, possible. The limit is set by the history of the concept (Koselleck (1985) 89):

Once 'minted', a concept contains within itself, purely linguistically, the possibility of being employed in a generalized manner, of constructing types, or of disclosing comparative insights.

The difference between Lloyd and Koselleck is not as substantial as it might seem on a first reading. Koselleck's *Begriffe* and Lloyd's "explicit categories" are similar entities so even though they would not agree on the nature of "concepts" there does not seem to be a lot separating their historical approaches. I draw on both: from Lloyd the emphasis on explicit categories and detailed analyses of complex arguments, stressing the synchronic aspect, and from Koselleck the focus on the history of "concepts" and the process by which they are minted, stressing the diachronic.

### *3. Overview.*

Ἱστορία was not a given in Archaic and Classical Greece. The situation was different in the Hellenistic period, where ἱστορία had gained status as a fundamental category in descriptions of the past and descriptions of nature. It had been minted, though the minting process never ends. In the following I present four independent but interrelated studies. I hope they add up to a sustained enquiry into the minting process of this fundamental concept. The studies follow a roughly chronological order.

Chapter I has as its focus the proem of Herodotus' *Histories*. The proem has frequently been used as a key to the *Histories*. Among the most important elements in this kind of reading is the use of ἱστορίη in the proem. Usually scholars look back, either to the Ionian "enlightenment" or an archaic institution of a ἵστωρ. I review the material in this chapter, starting with Homer and Hesiod. I do this partly to explore the proem and partly to explore the uses of etymology for interpreting the uses of ἱστορία.

Chapter II takes a closer look at Herodotus' practice in the *Histories*. I follow his uses of ἱστορίη and ἱστορεῖν and this leads me to book two, the Egyptian logos. This seems to be the unavoidable destination for anyone exploring the methodology of Herodotus. It is in book two that Herodotus is most explicit about his procedures. There are, in particular, two areas where he explicitly applies ἱστορίη: his enquiries about the river Nile, and the fates of Helen and Heracles. These are two different areas, the hidden geography of the world and the hidden past. From Herodotus I turn to the Hippocratics, and the treatise *On Ancient Medicine*. Here I am again mainly concerned with explorations of the past, in this case the past of medicine. How does a medical writer use the past and what are his means of accessing it? In this context the Hellenistic medical sect known as the Empiricists is also very important. I therefore end this chapter on analysing their methodology with special attention on the role of ἱστορία.

Chapter III is a detailed enquiry into the uses of the ἵστωρ- vocabulary in the only treatises of the Hippocratic collection that use it extensively: *On Generation*, *On the Nature of the Child* and *Diseases IV*. Here we yet again are dealing with enquiries into what is hidden, in this case the internal workings of the body and more precisely the conception and the development of the foetus. This gives me an opportunity to compare the Hippocratic material with

Aristotle's later treatment of the same material: the egg experiment. This throws up questions about the relation of observation and theory, and in this context I discuss briefly the methodological passages from Aristotle's zoology, where he explains the role of ἱστορία and its status within his explanatory framework.

Chapter IV takes a closer look at what kind of work Aristotle's *Historia* was, comparing Aristotle with Theophrastus and his *Historia*. There are some apparent differences between these two works and the question I ask is whether this has anything to do with the subject matter of these two different works: animals and plants. The first half of the chapter concerns the status of living nature, or the sublunary worlds, in the overall cosmology of Aristotle and Theophrastus. The second half concentrates on the *Historiae* of Aristotle and Theophrastus.

In these four chapters I concentrate on the uses of the ἱστορ- vocabulary in particular arguments in order to analyse the uses it is put to. They are roughly chronological and present a story of the concept: of how it changes, develops and becomes increasingly fixed, or minted, as a category. In my concluding discussion I draw a systematic way, abstracting from the complex arguments I have been concerned with in my four studies.

## CHAPTER I

### *The Histôr in Historia*

The moment ἱστορίη is placed firmly on the intellectual map is in the opening words of Herodotus' *Histories*:

Ἡροδότου Ἀλικαρνησέως ἱστορίας ἀπόδεξις ἦδε, κτλ.

This raises the question of why he presented his work like this, and, more generally, why he presented his work at all, i.e. why he announces at the start, together with his name and place, the contents of his work. The first few lines of Herodotus' *Histories*, i.e. the proem<sup>1</sup>, are among the most intensively discussed lines in the whole corpus of Greek literature. They are often used as a key to the *Histories*.<sup>2</sup> It has frequently been argued that they express Herodotus' debt to Homer, not only for the grand scheme of his large composition but also for the nature of the work — what it is about, what its purpose is. Ἱστορίη is one of the most important elements in this kind of reading, as it can possibly be taken to refer back to a Homeric model of a judge

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<sup>1</sup> By "proem" I mean the lines that precede chapter one in modern editions of the text.

<sup>2</sup> E.g. Kirschner (1965), Hommel (1981), Nagy (1990b), Bichler (2000).

(cf. ἵστωρ in *Il* XVIII 501 and XXIII 486).<sup>3</sup> But it can also be read as signalling a break from the epic tradition, if we understand it as referring to an Ionian tradition of inquiry.<sup>4</sup> The proem, and the chapters immediately following, are undoubtedly important for an overall interpretation of Herodotus, as it is here that he establishes the rules of the narrative for his readers as well as his own person, the narrator.<sup>5</sup> It is quite another thing to try to read from this something about his overall methodology, as indicating what he actually does in the rest of the work. Even so, the fact that he did introduce his work with these words is the reason why we know history as "history", and that in itself is important.<sup>6</sup>

I will, later in this chapter, discuss the proem in more detail. Before I do that it is important to look into the history of ἱστορίη and cognates in order to see what Herodotus might be claiming, *if* he is claiming anything by using this word. Then I will take a closer look at the phenomenon of the ἵστωρ. Some discussions of the proem, particularly those of Nagy and Connor, rely on the idea of some kind of an institution of the ἵστωρ Herodotus is supposed to have identified himself with. Was there such a thing, and, if so, what was it? Later I will look closer at contemporary or near-contemporary comparisons, among them Hecataeus and Thucydides as well as Simonides, i.e. the so-called

<sup>3</sup> So Nagy (1987) and (1990b); Lateiner (1989) 92; Connor (1993).

<sup>4</sup> Thus e.g. Romm (1998) 20 and Thomas (2000) 13-16, 135-167. Thomas argues that Herodotus is not referring to an *old* Ionian tradition of ἱστορίη, but to a *new* contemporary one, by which she means Hippocratic.

<sup>5</sup> See e.g. Dewald (1999) 223.

<sup>6</sup> Romm (1998) 9: "In his opening sentence Herodotus wrote, 'This is the display of the *historiê* of Herodotus of Halikarnassus,' using a word that in his day denoted 'research' or 'inquiry' rather than a narrative of past events. The word *historiê* thus provided a convenient handle for making reference to his text, so much so in fact that the word subsequently took on a new meaning, 'a work of literature based on inquiry, like that of Herodotus' — and hence started its evolution towards its modern day meaning. (We might therefore say that Herodotus can justly be called Father of History, the honorific Cicero gave him, in at least one sense: he gave birth to the word as we now know it — he is the father of 'history'.")

New-Simonides.<sup>7</sup> When Herodotus composed his account of the Persian wars there were already some alternative versions around, in various literary and non-literary forms. The Persian wars were, for the Greeks, among the defining events of the fifth century.<sup>8</sup> Herodotus has managed to overshadow them all, and his account is the main source for later historians, for better and for worse, in their studies of the Persian wars. But the nature of his work is notoriously difficult to grasp. Was he a historian? The answer to this question depends on what we mean by "history". If he was not doing history, was it fiction? What do we mean by "fiction"? More importantly, can we ascribe our concepts of "history" and "fiction" to Herodotus, i.e. is it meaningful to say that if it is not history it must be fiction, that if he is not telling the truth according to modern criteria he must be lying?<sup>9</sup> To classify his work is no easier than it is to classify Plato's dialogues. It is *sui generis*. That it *became* one of the most important works in the history of historiography, even though it was for the most part regarded as bad History, does not mean that it was a historical study, in *our* sense of "history", for Herodotus or his contemporaries.<sup>10</sup>

Even though I frame this as a discussion about Herodotus, and in particular his proem, I intend this chapter to do a double work. First, to give an account of the history of ἱστορίη and cognates before Herodotus, the history of

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<sup>7</sup> Cf. Boedeker and Sider edd. (2001).

<sup>8</sup> Though Kuhrt (1995), in her history of the Near East, spends only 12 lines on the Ionian revolt and the battle of Marathon and two pages on "The western front, 486-431", less than a page on the battles of 480-479. From our, or at least *her*, perspective on the history of the ancient middle east, these battles were not particularly important. See also Bowden (1998).

<sup>9</sup> This is the premise behind Fehling's (1989) criticism of Herodotus. See the recent rebuke of Murray (1987) 27 n 28: "To postulate deliberate and wholesale deception (...), rather than faulty execution, requires an answer to the question, 'Who invented the model which Herodotus is thought to have abused?' It implies a proto-Herodotus before Herodotus."

<sup>10</sup> Thomas (2000) 137: "While it is always important to bear in mind that there was no separate discipline such as history when he wrote, it is harder to imagine exactly what that meant in practice in mid to late fifth century." This strikes me as a more interesting subject to try to grasp, which Thomas indeed tries to do.

the word and its etymology, and, second, to test the explanatory value of this for the authors I am mainly studying in this thesis, i.e. Herodotus, the Hippocratics and Aristotle. The primary question usually asked in this context is about the original meaning of ἱστορίη. This has been studied a great deal over the years and the main contestants have been "knowledge"<sup>11</sup> and "inquiry"<sup>12</sup>, while some recent alternatives are "testimony"<sup>13</sup> and "judgement"<sup>14</sup>. It is usually assumed in studies of this kind, and this is often the impetus that drives them, that "the original" meaning, expressed by the *root*, to use the proper terminology, is transmitted through the stem and to all the branches. Discovering the "original" meaning is thus supposed to give a key to later usage. The linguistic picture seems too anarchic for this to be possible, at least according to a strong formulation of the thesis.

### 1. Earliest uses of ἱστωρ.

The word ἱστορία is based on the stem ἱστωρ, from which also ἱστορέω, ἱστόριον and ἱστορικός etc. are formed. The root is usually believed to be the Indo-European \*w(e)id-, which has something to do with sight (cf. video, ἰδεῖν, εἶδος and οἶδα).<sup>15</sup> The main problem with this derivation is the rough

<sup>11</sup> E.g. Snell (1978) 36-8.

<sup>12</sup> E.g. Muller (1926). Szemerényi (1972) opts for both, but argues that we are in effect dealing with two homonymous but radically different words. See below.

<sup>13</sup> Sauge (1992).

<sup>14</sup> E.g. Nagy (1990b).

<sup>15</sup> Pokorny (1994) ad loc "u(e)id-". Frisk (1954) ad loc. "w(e)id-", stressing the idea of seeing involved in ἱστωρ and cognates, refers to the use and distribution of words of this stem as following the spread of Ionian science and enlightenment ("Wissenschaft und Aufklärung"). This is typical of a narrowly linguistic and historically naïve approach to the vocabulary of philosophy and science.



breathing<sup>16</sup>, often explained by the presence of a digamma in a couple of Boiotian inscriptions from late third century BCE, where the word *ῥίστωρ* is used of witnesses.<sup>17</sup> A witness is someone who has seen or otherwise experienced a (potentially) contested event, and seems therefore to fit the combination of *\*w(e)id-* and the suffix *-tor*. *Tor* (as well as *ter* and *tes*) is an agent suffix, and *ῥίστωρ* would thus be an agent of seeing, according to the traditional view.<sup>18</sup> Benveniste ((1948) 45) goes even further than this, as he distinguishes between two kinds of agents, expressed by *-τωρ* and *-τηρ* respectively. According to him the suffix *-τωρ* refers to someone who happens to do something ("l'auteur d'un acte") while *-τηρ* refers to a person fulfilling a function ("l'agent d'une fonction"). As witnesses are usually not professional, i.e. *as* witnesses, this seems to fit the story so far rather well. This is sometimes thought to be the meaning of *ῥίστωρ* in early Greek literature.<sup>19</sup>

But there is a problem when we look at the earliest occurrences of *ῥίστωρ* in Greek literature, *Iliad* XVIII 501 and XXIII 486 and Hesiod's *Erga* 792. In the games in honour of Patroclus (*Il* XXIII 262-897) the first contest is a chariot race. As the chariots are returning a quarrel breaks out between Idomeneus, who claims to see Diomedes in the lead, and Aias who, abusing Idomeneus, claims that Eumelos, who actually has crashed, is in the lead. Idomeneus replies (483-7):

<sup>16</sup> Most editors of the *Iliad* print the psilotic form *ῥίστωρ*, but the rough breathing predominates in the ancient evidence, and a scholiast to *Il* XVIII 501 (=Herodian II. 108, 32 L) discusses the presence of the breathing, and he *might* have had an old manuscript with *ΗΙΣΤΟΠΙ*. I opt for a breathing in most instances in the following.

<sup>17</sup> *ῥίστορες Μνασιγένης Θεδώ [ρω], Θεδώρος Μνασιγένης, Δαμάτριος Δάμονος, Κλειτ[ί]δας Σαμίξω*. (*JG* VII, Berlin (1892) 1780); *ῥίστορε[ς] Ἰ[ὸ]άσ[υν]ος Θιογίτωνος*, κτλ. (ibidem 3173). Cf. also *Jusj* (CMG I, i, 4).

<sup>18</sup> See E. Fraenkel (1910) 14; also Poltera (1997) 39.

<sup>19</sup> Snell (1973) 181: "*ῥίστωρ* ist 'der Wissende', 'der Augenzeuge, der gesehen hat': das dazu gebildete Verb *ῥιστορέω* heißt zunächst 'ich bin Wissender'." Cf. also Snell (1978) 36; Lesky (1971) 255.



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Αἶαν, νεῖκος ἄριστε, κακοφραδές, ἅλλά τε πάντα  
 δεύει 'Αργείων, ὃ τέ τοι νόος ἐστὶν ἀπηνής.  
 δεῦρό νυν, ἧ τρίποδος περιδώμεθα ἧε λέβητος,  
 ἵστορα δ' 'Ατρείδην 'Αγαμέμνονα θείομεν ἄμφω,  
 ὁππότεραι πρόσθ' ἵπποι, ἵνα γνώης ἀποτίνων.

It might be argued that Agamemnon is to witness which charioteer is the first, i.e. that he is to observe the finish of the race, and that *that* is the nature of his being a ἵστωρ. Another possibility is that he is to preside over the quarrel as an arbitrator, and that *that* is the meaning of ἵστωρ, an interpretation supported by *Il* XVIII 490-508, the scene on the Shield of Achilles including the dispute over blood-money (497-501):

λαοὶ δ' εἰν ἀγορῇ ἔσαν ἀθρόοι· ἔνθα δὲ νεῖκος  
 ὠρώρει, δύο δ' ἄνδρες ἐνείκεον εἵνεκα ποινῆς  
 ἀνδρὸς ἀποφθιμένου. ὃ μὲν ἤϋχετο πάντ' ἀποδοῦναι  
 δῆμῳ πιφαύσκων, ὃ δ' ἀναίνετο μηδὲν ἐλέσθαι·  
 ἄμφω δ' ἰέσθην ἐπὶ ἱστορίῳ πείραρ ἐλέσθαι.

What is the debate about? Is the one man claiming to have paid compensation, the other contesting it? Or is one claiming to have the right to pay, the other refusing to accept it? Most of the linguistic, as well as comparative, evidence seems to suggest the latter reading.<sup>20</sup> The details of this debate are not important for my present purposes. In neither case would the ἵστωρ be a witness, as there is no indication that the ἵστωρ is supposed to have witnessed anything (like a handing over of money, if that is the issue) other than the

<sup>20</sup> Muellner (1976) 100-106 on the Mycenaean evidence; Anderson (1976) on the parallels of the Shield of Achilles with the plot of the *Iliad* as a whole; Westbrook (1992) on parallels with Near Oriental and Mycenaean legal practices. For a balanced discussion and further references, see Edwards (1991) 213-18 and Gagarin (1986) 26-33, who thinks the case is more complex than either of the two alternatives suggested. See now Roebuck (2001) 58-64, who agrees with this interpretation.

debate itself. Instead the matter is left to a group of elders, who take turns giving judgement.<sup>21</sup>

Common to the two passages from the *Iliad* is that the ἵστωρ is someone both (ἄμφω) the contestants refer the dispute to. He is not there as a witness to what happened nor as someone in a position of particular knowledge, except possibly knowledge of the customary laws of the community.<sup>22</sup> He is someone the contestants voluntarily refer the case to, a person they *both* expect to be able to solve it in a way they can *both* live with. Admittedly, in the first case (*Il* XXIII), the contestants do not agree on handing the matter over to Agamemnon. It is only Idomeneus who suggests that they do, but he suggests that they *both* do<sup>23</sup>, which only supports this interpretation.

But turning to the "days" section of Hesiod's *Erga* we seem to meet a different category of ἵστωρ (792-3):

εἰκάδι δ' ἐν μεγάλῃ πλέῳ ἥματι ἵστορα φῶτα  
γεῖνασθαι· μάλα γάρ τε νόον πεπυκασμένος ἔσται.

Whether we read ἵστωρ with the begetter, the son, or both, it surely means nothing more specific than "wise" or "knowing". We might want to read a Homeric "arbitrator" into this passage, which would make the man in question a good arbitrator between days, i.e. a good judge of which day is the right one for begetting a boy. But it is hard to see any judicial or quasi-judicial function here, a very important element in the *Iliad* passages. In Bacchylides IX 44 (Snell/Maehler) ἵστωρ is similarly used in a more general sense:

<sup>21</sup> Roebuck (2001) 59: "The gold goes to the one whose knowledge of the law and opinion based on it is accepted. ... Where oral customary law is applied, that rule which produces the result acceptable to the assembly is the right rule. Why? For that reason! It would be unthinkable for the traditional law of the community to project an unjust result."

<sup>22</sup> Roebuck (2001) 59.

<sup>23</sup> Cf. ApollRhod I 188-9.

ἐ]γχεών

ἵστορες κοῦραι διωξίπποι' Ἀρηος,  
κτλ.

The Amazons are skilled with the spear and this can not have anything to do with arbitration or, in any essential sense, with seeing. The meaning of ἵστωρ here must be skilful,<sup>24</sup> pointing in the same direction as Hesiod, i.e. to a more general kind of knowledge than either what is based on seeing or judicial status.<sup>25</sup>

Here again we are in a situation where it is difficult to settle what ἵστωρ means. It has something to do with knowledge, but the idea of seeing does not seem to be prominent in these examples, if it is present at all.<sup>26</sup> In general it seems doubtful, in the case of Homer, Hesiod and Bacchylides (and Heraclitus, see below), to try to narrow down the meaning of ἵστωρ to a single sense. In Homer we have ἵστωρ connected with a quasi-judicial function of resolving a conflict. But there are other scenes of conflict in the *Iliad* where there is no mention of a ἵστωρ when it comes to solving the case. Neither is there in Hesiod's *Erga*, which has a lot to say on disputes and their solution. This range of uses and meanings in these precious few examples shows that though an idea of judicial sentencing is present in some early uses of ἵστωρ, there are other contexts where it refers to skills or wisdom in general.

<sup>24</sup> Cf. the opening lines of the Homeric hymn to Selene, admittedly one of the late hymns, but due to the formulaic character of the opening lines they might go back to an older tradition: Μήνην αἰδίου τανυσίπτερον ἔσπετε, Μοῦσαι ἡδυεπεῖς, κοῦραι Κρονίδεω Διός, ἵστορες ᾤδης. See also Apollonius Rhodius I 188-9 (on Erginus and Ancaeus, two of Poseidon's sons): ἵστορε δ' ἄμφω ἡμὲν ναυτιλίας ἡδ' ἄρεος εὐχετόωντο.

<sup>25</sup> Ἰστωρ or ξυνίστωρ in tragedy also confirms this, e.g. Euripides' *Suppl* 1174 and *IT* 1431; Sophocles *El* 850-2; cf. also Thucydides II, 74.

## 2. Heraclitus and Plato's Cratylus.

I will now turn to texts that are more overtly epistemological: Heraclitus from Ephesus and Plato's *Cratylus*, starting with frg. 35<sup>27</sup>:

χρὴ γὰρ εὖ μάλα πολλῶν ἱστορας φιλοσόφους ἄνδρας εἶναι καθ'  
'Ηράκλειτον

What part of this, if any, is originally from Heraclitus is and has been a disputed issue, though all seem to agree that at least πολλῶν ἱστορας belongs to the original. This is often translated as "enquirers into many things"<sup>28</sup>, but this is surely reading a later meaning of ἱστορίη back into Heraclitus. But is Heraclitus presenting the ἱστωρ as a positive figure? The answer to this question rests to some degree on whether we want to read φιλόσοφοι as a part of the original or not, and, if we read it as part of the original, whether we think it was a positive term or not for Heraclitus.<sup>29</sup> Read as a positive statement about the ἱστωρ the fragment states how difficult it is to know the true nature of things<sup>30</sup>, but read as a critical statement it is deriding those who claim to be wise: they know many things but not the one thing they really need to know,

<sup>26</sup> Frisk (1954) ducks the problem by referring to the examples in Homer and Hesiod as "in unklarer Bedeutung."

<sup>27</sup> DK22B35: Clem *Strom* V, 140, 5. See below for the authenticity of the relevant fragments.

<sup>28</sup> E.g. KRS 218 and Robinson (1987) 29. DK and Snell (1924) translate "kundig".

<sup>29</sup> If it is authentic it is the earliest known use of the term.

<sup>30</sup> In which case it is read together with fragments that deal with how difficult it is to approach reality. Cf. DK22B123 (Them *Or* V 69b): φύσις δὲ καθ' Ἡράκλειτον κρύπτεσθαι φιλεῖ.

The message would be that the only way to know φύσις is to study it extensively.

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the λόγος that rests behind the stream of the phenomena.<sup>31</sup> In this case we should read it with frgs.129<sup>32</sup> and 40<sup>33</sup>:

Πυθαγόρης Μνησάρχου ιστορίην <sup>34</sup> ἥσκησεν ἀνθρώπων μάλιστα πάντων,  
καὶ ἐκλεξάμενος ταύτας τὰς συγγραφὰς ἐποίησατο ἑαυτοῦ σοφίην,  
πολυμαθείην, κακοτεχνίην.

πολυμαθίη νόον οὐ διδάσκει· Ἡσίοδον γὰρ ἂν ἐδίδαξε καὶ Πυθαγόρην,  
αὐτίς τε Ξενοφάνεά τε καὶ Ἑκαταίον.

To know a lot is not tantamount to understanding, i.e. to know *the* important thing that explains all the rest. Verdenius ((1947) 181), relying on Snell, reads frg. 35 as drawing a distinction between *ιστορεῖν* and *μανθάνειν*, "inquiring

<sup>31</sup> There are no compelling reasons to read *χρή* as a part of the original, in which case we would not be dealing with a normative statement from Heraclitus, but Clemens – our source – using him to further his own agenda. Heraclitus might even, as Kranz in DK suggest, be referring to a commonly held view about what it is to be a lover of knowledge. The following claim of Verdenius ((1947) 280), commenting on DK, completely ignores the problematic context of the fragment: "Kranz presumes that frag. 35 does not express the author's own conviction but only a popular view. However, the admonitory force of *χρή* seems to preclude such an explanation." Another possible interpretation of the fragment has been proposed by Lallot (1971). In order to make fragments 35, 49 and 129 cohere, he proposes to translate: "Il y a grand besoin que enquêtent sur le multiple soient hommes épris de sagesse." 17, and n 3.

<sup>32</sup> DK22B129: DL VIII 6.

<sup>33</sup> DK22B40: DL I 88.

<sup>34</sup> DK22B129 contains the earliest occurrence of *ιστορίη* in the extant Greek literature, if we accept it as authentic, and there is only one other occurrence of *ιστορία* in the extant fragments of the pre-Socratics, the other being Democritus DK68B299, which authenticity has also been contested. Diels (but not Kranz, pace Thomas (2000) 164 n 95) had some doubts about it, mainly because of the phrase *ταύτας τὰς συγγραφὰς*. What books could Heraclitus be referring to? Diels, like Diogenes Laertius, thought the phrase *ἐκλεξάμενος ταύτας τὰς συγγραφὰς* must mean that Pythagoras himself wrote books, and that therefore at least this part of the fragment must be false. See Lallot (1971) 16-17. It is still debated when books became available, and there is no incontestable evidence either way. It can therefore not be concluded that this phrase is inauthentic *for the reason that* we can not imagine what books he is referring to (pace Schofield in KRS 217). See e.g. Johansen (1993) 27-29. Ion of Chios (DL I, 120) might be replying to this: εἴπερ Πυθαγόρης ἐτύμως σοφός, ὃς περὶ πάντων ἀνθρώπων γνώμας εἶδε καὶ ἐξέμαθεν. (Accepting Sandbach's (Sandbach (1958-9)) emendation of ὁ σοφός to σοφός, ὃς.) Pythagoras was wise, but only because of what he learned from others. Iamblichus, in his biography of Pythagoras (XVIII 89), states: ἐκαλείτο δὲ ἡ γεωμετρία πρὸς Πυθαγόρου ιστορία. It is, of course, impossible to rely on this report,



independently" and "borrowing other people's wisdom", and understands this as a serious admonition by Heraclitus. Consequently he sees ἱστορίη in frg. 129 as an "ironical sneer" at Pythagoras.<sup>35</sup> The issue is, to put it simply, whether Heraclitus is criticizing the practice of ἱστορίη (and the state of being a ἵστωρ) in general, or criticizing Pythagoras for not having obtained νοῦς, despite doing the right thing. This is both a problem for understanding ἵστωρ in frg. 35 and for understanding ἱστορίη in frg. 129. If he is criticizing Pythagoras for not obtaining understanding, even though he knew a lot, we should understand frg. 35 as expressing Heraclitus' own view on methodology, whereas if we take him to be more generally criticizing the practice of ἱστορίη, that would be a good reason to believe that he also sees the state of being a ἵστωρ in a negative light. But even on the positive reading, doing ἱστορίη is not sufficient to gain proper understanding or knowledge.

If we understand Heraclitus in this "positive" way, i.e. that doing ἱστορίη is necessary but not sufficient to gain proper knowledge<sup>36</sup>, there is a partial parallel with Aristotle's understanding of ἱστορία in relation to ἐπιστήμη. The collected information about animals is not sufficient to gain knowledge, even though, at least in the case of animals, this information is a necessary condition for knowledge. (I discuss this in chapters III and IV.) In this context I want to draw attention to what seems to be a similar distinction drawn in the *Cratylus* of Plato. David Sedley has recently (1998a) argued that Plato actually believed that the etymologies proposed in the dialogue were exegetically sound — "that they correctly analyse the hidden *meanings* of the words." (140) He goes on to say: "This must be kept quite distinct from the

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but the combination with Heraclitus DK22B129 gives it some plausibility. It is used by von Fritz (1978) as positive evidence for the inclusiveness of ἱστορία.

<sup>35</sup> "Heraclitus first quotes the traditional praise of Pythagorean wisdom and then denounces it as charlatanism." 284.

<sup>36</sup> Cf. Kahn (1979) 105-110.



thesis that the etymologies are 'philosophically correct', which would be the view that the meanings which they attribute to words convey the *truth* about their *nominata*." The long etymological section of the dialogue (390e-421c) turns out to confirm the view that all things are in flux (ὥς τοῦ παντὸς ἰόντος τε καὶ φερομένου καὶ ῥεοντός φαμεν σημαίνειν ἡμῖν τὴν οὐσίαν τὰ ὀνόματα 436e). Among the words explained in this part is ἐπιστήμη (412a):

καὶ μὴν ἢ γε ἐπιστήμη μηνύει ὡς φερομένοις τοῖς πράγμασιν  
ἐπομένης τῆς ψυχῆς τῆς ἀξίας λόγου, καὶ οὔτε ἀπολειπομένης οὔτε  
προθεούσης· διὸ δὴ ἐμβάλλοντας δεῖ τὸ *h* "ἡἐπιστήμην"<sup>37</sup> αὐτὴν  
ὀνομάζειν.

Accordingly, the knowing soul needs to keep up with the things, which are continually moving. The etymological explanations of other "knowledge" words correspond to the same basic view.

Ἐπιστήμη is the only word repeated, and corrected, in the section later in the dialogue where Socrates, in order to refute the thesis that all etymologies indicate flux, explains a new batch of "knowledge" words (437a):

σκοπῶμεν δὴ ἐξ αὐτῶν ἀναλαμβάνοντες πρῶτον μὲν τοῦτο τὸ ὄνομα, τὴν  
"ἐπιστήμην," ὡς ἀμφίβολον καὶ μᾶλλον ἔοικε σημαίνοντι ὅτι ἴστησιν  
ἡμῶν ἐπὶ τοῖς πράγμασι τὴν ψυχὴν ἢ ὅτι συμπεριφέρεται, καὶ  
ὀρθότερόν ἐστιν ὥσπερ νῦν αὐτοῦ τὴν ἀρχὴν λέγειν μᾶλλον ἢ  
ἐμβάλλοντας τὸ *h* "ἡἐπιστήμην," ἀλλὰ τὴν ἐμβολὴν ποιήσασθαι ἀντὶ  
τῆς ἐν τῷ εἶ ἐν τῷ ἰῶτα.

<sup>37</sup> Here I try to stay as close as possible to the typographical devices used in the new OCT, accepting Schmidt's emendation. See also Sedley (1998a) 151 n 40 for this and ἐμβάλλειν meaning "aspirate".

How does ἐπιστήμη make our soul stand still by the things if they are moving, and there is no indication that Plato (or Plato's Socrates) claimed that the things, as opposed to the ideas, were still? The answer comes in the etymology proposed for ἱστορία immediately after the passage just quoted (437b):

ἔπειτα ἡ "ἱστορία" αὐτό που σημαίνει ὅτι ἴστησι τὸν ροῦν.

The words dealt with in this section all relate to a mental state relevant to knowing (the other are: βέβαιον, πιστόν and μνήμη). Ἱστορία is therefore, most probably, in the same category. The issue is that knowledge is stable and certain and in this respect, at least, it does not follow the flow of things. Ἱστορία is what establishes the link between ἐπιστήμη and the ροῦς of the perceptible world. Once the flow has been stopped and we have stable information (a possible translation of ἱστορία) about things, knowledge or understanding (depending on how we want to translate ἐπιστήμη) stops our soul by the things. This distinction is in many ways similar to the one in Heraclitus, if we assume, as is not unlikely, that it is possible to have the ἱστορία without the ἐπιστήμη.<sup>38</sup>

### *3. Some tragic problems.*

Of the cognates of ἱστορία Herodotus uses the verb ἱστορεῖν most frequently. The verb is fairly common in tragedy, where it is used by Aeschylus, Sophocles and Euripides, in general meaning "to ask". It is not in any way obvious, if

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<sup>38</sup> It must be emphasized, returning to the distinction Sedley draws between exegetical and philosophical correctness, that this is still exegetical and not philosophical.

possible at all, to refer this meaning back to an idea of seeing or, indeed, knowing. The one who knows needs not ask.<sup>39</sup> Discussing the etymology of the verb ἵστορεῖν Szemerényi ((1972) 243-6), taking as his starting-point that ἵστορεῖν can mean both "to know" and "to ask" from its earliest recorded uses and that these senses do not cohere and are even contradictory, proposes that we are actually dealing with two different words, one derived from *\*w(e)id-* and the other from the Indo-European root *\*ais-*, "to seek".<sup>40</sup> Apart from its initial implausibility, this theory also suffers from misunderstanding the key evidence, and particularly the star witness, Aeschylus' *Eumenides* 455 (Orestes to Athena):

Ἄργεῖός εἰμι, πατέρα δ' ἵστορεῖς καλῶς,  
Ἀγαμέμνον', ἀνδρῶν ναυβατῶν ἀρμόστορα,  
κτλ.

Even though many have taken this to mean "you know my father well"<sup>41</sup>, the phrase probably means something like "it is good that you ask about my father"<sup>42</sup>. There is no reason to see a radical break in meaning here between knowing and asking. There are two other places in Aeschylus where ἵστορεῖν is often understood as meaning "know", *Persians* 454 and *Agamemnon* 676. In the *Persians* 447f. the messenger describes to the queen how Xerxes had sent a group of men to Salamis in order to make an easy killing of the Greek force.

<sup>39</sup> Particularly on the traditional way of understanding verbs in *-έω*, as denoting the condition or actuality of what is expressed in the stem.

<sup>40</sup> He takes the meaning of *\*w(e)id-* to be "to know" and of *\*ais-* to be "to seek". See Szemerényi (1960) 232-238 for a discussion of *\*ais-*. He turns this into a typical account of Ionia as the cradle of science, from where the *\*ais-* variety of ἵστορεῖν comes, and the more dogmatic Athens (not his term), where the native homonymous ἵστορεῖν is of the *\*w(e)id-* variety.

<sup>41</sup> E.g. Lloyd-Jones (1970) and Sommerstein (1989) 161.

<sup>42</sup> See e.g. Verrall (1908) ad loc. and Snell (1978) 36-7.

They were promptly slaughtered in the most ignominious way. In this context he says about Xerxes (454):

κακῶς τὸ μέλλον ἱστορῶν.

Does this mean that he *knew* badly what was to come<sup>43</sup>, or does it say that he was a bad student of the future, that he asked badly, meaning that he was bad at strategy? Similar to the previous example there is no need to see the one possibility excluding the other.

In *Agamemnon* 636-680 the herald brings news of his escape from a storm on sea, in which also Agamemnon was caught. He assures the chorus (Clytemnestra has just left the stage) that Agamemnon is also safely back (674-7):

Μενέλεων γὰρ οὖν  
 πρῶτόν τε καὶ μάλιστα προσδόκα μολεῖν.  
 εἰ δ' οὖν τις ἀκτὶς ἡλίου νιν ἱστορεῖ  
 καὶ ζῶντα καὶ βλέποντα, κτλ.

Here, also, ἱστορεῖν is usually taken to mean "know"<sup>44</sup> but, again it can just as well mean "learn about".<sup>45</sup> There is, therefore, no need to claim a radical difference in meaning between these uses of ἱστορεῖν in Aeschylus.

If, for comparison, we look at the use of the verb in the Hippocratic Corpus we find it in the treatises *On the Seed*, *On the Nature of the Child* and *Diseases IV* (8, 7; 48, 3) meaning "proofs" or "indicates", where it is

<sup>43</sup> E.g. Broadhead (1960) 131.

<sup>44</sup> "an abnormal usage" Denniston and Page (1957) ad loc., referring to the passages from *Pers* and *Eu* for parallels.

<sup>45</sup> Cf. Eduard Fraenkel (1978) commentary ad loc. He translates: "... for as Menelaus is concerned, first and chiefly thou must suppose that he is back again. But if any ray of the sun does descry him safe and sound, ..." Fraenkel seems to approach here the later Hellenistic use of ἱστορεῖν in the sense of reporting.

obviously used in conjunction with the frequently used ἱστορίον, "proof" or "evidence". These treatises are usually dated to the late fifth century, and therefore not far removed from the material I am dealing with here (see chapter III). It is later used in the post-Epicurean *Precepts* meaning "to ask/inquire". It is therefore obvious that the explanatory force of going back to stems and roots is limited, and that we have to be particularly careful in dealing with the earliest material. It only gives us few and precious glimpses of a vast area and we must treat them as such.<sup>46</sup>

#### 4. *HerHist I, proem etc.*

Now I will turn to a closer reading of the proem of Herodotus in the light of the foregoing. It must be kept in mind that I do not intend this to be a general discussion of Herodotus' methodology or about his work in general. This is a close reading of the proem, and the chapters immediately following, trying to see how and whether it recalls an older model Herodotus, the announced author of the work, can be said to refer to. I will also compare his proem with the proems of Hecataeus and Thucydides, as well as the new-Simonides, as they show marked differences from his.

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<sup>46</sup> I am not claiming that linguists are not aware of this. Only that this element is often brushed aside by scholars looking into the essential meaning of key words. E.g. Sauge (1992) *passim*, cf. Thomas (1995).

Ἡροδότου Ἀλικαρνησέως ἱστορίας ἀπόδεξις ἦδε, ὥς μήτε τὰ  
γενόμενα ἐξ ἀνθρώπων τῷ χρόνῳ ἐξίτηλα γένηται, μήτε ἔργα μεγάλα  
τε καὶ θυμαστά, τὰ μὲν Ἕλλησι, τὰ δὲ βαρβάροισι ἀποδεχθέντα,  
ἀκλεᾶ γένηται, τὰ τε ἄλλα καὶ δι' ἣν αἰτίην ἐπολέμησαν ἀλλήλοισι.

As far as can be said that Herodotus' *Histories* have a Greek title, ἱστορίας ἀπόδεξις is it. But Herodotus would not have regarded himself as a historian, ἱστορικός,<sup>47</sup> as nothing of the sort existed in his time. He has similar status for history as Aristotle has for zoology and the Hippocratics for medicine. From the point of view of later generations they either fathered these disciplines or saved them from (superstitious) speculation.<sup>48</sup> He was an enquirer, but of what? The great and remarkable deeds of Greeks and barbarians and, among other things (τὰ τε ἄλλα καὶ ),<sup>49</sup> the reason why they fought each other. Why does he want to do that? So that these things will not be forgotten. He describes his role as preservative. But he is not going to preserve everything from the past in a systematic account, only what already, according to him, is noteworthy or glorious, i.e. the ἔργα μεγάλα τε καὶ θυμαστά . He does not want these ἔργα to become ἀκλεᾶ. The concept of renown or glory (κλέος) was essential to the heroes of epic poetry and even the rationale of it, by keeping alive the

<sup>47</sup> Probably coined by Aristotle and first found in his *Po* ch 9. Thomas (2000) argues that Herodotus, by using ἱστορίη, is using the fashionable vocabulary of contemporary "science", by which she basically means the Hippocratics. But as Herodotus uses the verb most frequently, and in the same way as it is used in tragedy, it might just as well be argued that he is using a vocabulary that was more common in Athens. It is regrettable that I have not been able to deal sufficiently with the tragedians and that Sauge, who does, is too obsessed with establishing his pet "meaning" for ἱστορία.

<sup>48</sup> Not many people working in these fields today would recognize that any of these ancient writers were doing what they themselves are doing now. From their point of view the fathers and saviors of history, medicine and biology still belong to a pre-scientific period.

<sup>49</sup> Most translators take this to mean "more particularly", "primarily" or "especially". But it does not have to contain so much emphasis. I prefer the weak translation "among other things".

memory of people and their actions.<sup>50</sup> This paragraph (i.e. the proem) has been much discussed in Herodotean scholarship, where the last part (from τὰ τε ἄλλα καί) has particularly been a source of trouble. Grammatically it fits awkwardly with the rest. Without it the statement *could* be taken to refer exclusively to the ethnographic parts of the *Histories*. It has even been suggested that it was not included in the introductory statement in its original form which, according to this view, was written before Herodotus conceived of the war as his central theme.<sup>51</sup> This is in support of Jacoby's (1913) analytic reading of the *Histories*, according to which Herodotus started as an "ethnographer" (much like Hecataeus), but later, realizing the importance of the Persian Wars, made them his central subject.<sup>52</sup> This is all in the realm of speculation. What is important is that it is included in the work as we have it and belongs to Herodotus' announced ἱστορίας ἀπόδεξις.

Another important question relating to this sentence is: what does αἰτία ("responsibility", "cause") mean? It is repeated in the line immediately following. "Learned Persians (λόγιοι) say that the Phoenicians are responsible (αἵτιοι) for the difference".<sup>53</sup> There follow, meticulously laid out in a temporal

<sup>50</sup> Achilles has to choose between a long life in obscurity or to die young with κλέος. Romilly (1985) 60: "The first historian still sees it as his task to render excellence immortal — as had Pindar."

<sup>51</sup> Hommel (1981). In his (Hommel's) "original" version, where τὰ μὲν Ἕλλησι, τὰ δὲ βαρβάροισι ἀποδεχθέντα is also removed, it looks like this:

Ἡροδότου Ἀλικαρνησέως ἱστορίας ἀπόδεξις ἦδε,  
ὥς μήτε τὰ γενόμενα ἐξ ἀνθρώπων τῷ χρόνῳ ἐξίτηλα γένηται,  
μήτε ἔργα μεγάλα τε καὶ θυμαστά ἀκλεᾶ γένηται .

According to Hommel, Herodotus in his final edition, after he had written the *Histories* with the war at its centre, hurriedly added some words to announce the war as a central subject. He has problems explaining why Herodotus was in such a hurry.

<sup>52</sup> Connor's developmental version of Nagy's interpretation also points to this, Connor (1993). See below.

<sup>53</sup> Repeating a key word (in this case αἰτία/αἵτιοι) from a proem in the sentence immediately following is a common practice in epic poetry. This shows, according to Kirscher (1965), how deeply indebted Herodotus was to the epic form of narrative. But is it only common in epic poetry?



order (with μετὰ ταῦτα 's), divided into first (I, 2, 1) and second (I, 2, 2) injustice, four different abductions: of Io, by the Phoenicians; Europe by some Greeks; Medea by the Greeks; and Helen by Paris, which resulted in the Trojan war which again made the Persians enemies of the Greeks. A striking feature of this account is the rationalising nature of it. This is purely secular woman-stealing — which Herodotus mockingly dismisses as not being a serious offence (I, 4, 1). Herodotus concludes this discussion by putting the largest blame on the Greeks, as they invaded Asia by attacking and sacking Troy (which was not justified by mere women stealing). This whole discussion<sup>54</sup> is then dismissed as irrelevant by Herodotus in I, 5, 3, sometimes called "the second proem":

ταῦτα μὲν νυν Πέρσαι τε καὶ Φοίνικες λέγουσι. ἐγὼ δὲ περὶ μὲν  
τούτων οὐκ ἔρχομαι ἐρέων ὥς οὕτως ἢ ἄλλως κως ταῦτα ἐγένετο, τὸν  
δὲ οἶδα αὐτὸς πρῶτον ὑπάρξαντα ἀδίκων ἔργων ἐς τοὺς Ἕλληνας,  
τοῦτον σημήνας προβήσομαι ἐς τὸ πρόσω τοῦ λόγου ὁμοίως μικρὰ καὶ  
μεγάλα ἄστεα ἀνθρώπων ἐπεξιῶν.

It has even been claimed (by no less authorities than Felix Jacoby and Simon Hornblower), particularly with regard to οἶδα αὐτός, that this paragraph marks the beginning of historical writing.<sup>55</sup> This is supported with reference to the fact that the author here, for the first time, speaks in the first person and as such takes a critical stand towards the traditional stories of the Greeks. He could, therefore, be seen here to be delimiting historical time within which he believes

<sup>54</sup> This aitiological game was, according to Evans (1991) 39, a stock in trade of the λόγιοι, and parodied by Aristophanes (*Acharn* 514-34). It is an open question whether Aristophanes is parodying Herodotus only or whether they might both be parodying the λόγιοι. Asheri (1999) ad loc. reads this as the first digression: "In realtà, la «causa» è il tema della prima digressione." Does that mean that these stories are just for fun? Do they not underline a theme of the *Histories*, the friction between east and west, and thus serve a serious purpose? See Harrison (2000a) 200.

<sup>55</sup> This begs too many questions about what "history" is, questions I need not get into here.



himself able to claim knowledge about the things he writes about. And even if we do not want to go this far in positive statements about the nature of historical time or when the writing of history began (did it really begin precisely in Herodotus I, 5, 3), we might want to accept the more particular claim that this passage delimits the scope of Herodotus' *ἱστορίη*.<sup>56</sup>

In the chapter immediately following (I, 6) he claims that Croesus the Lydian was the "first foreigner as far as we know" (οὗτος ὁ Κροῖσος βαρβάρων πρῶτος τῶν ἡμεῖς ἴδμεν ) to come into direct contact with the Greeks, who, up to that time, had been free (ἐλεύθεροι). Is Herodotus drawing a line, a temporal line, between what belongs to knowable history and what lies in the realm of pure stories? Between history and mythology? Support for this has been sought in III, 122, 2:

Πολυκράτης γάρ ἐστι πρῶτος τῶν ἡμεῖς ἴδμεν Ἑλλήνων, ὃς  
θαλασσοκρατέειν ἐπειροήθη, παρὲξ Μίνω τε τοῦ Κνωσίου καὶ εἰ δὴ τις  
ἄλλος πρότερος τούτου ἦρξε τῆς θαλάσσης· τῆς δὲ ἀνθρωπίνης  
λεγομένης γενεῆς Πολυκράτης πρῶτως, ἐλπίδας πολλὰς ἔχων Ἰωνίης  
τε καὶ νήσων ἄρξειν.

Of the so-called "human generation" Polycrates was the first to control the sea. In other contexts Minos is a fully legitimate figure in the story Herodotus is telling (I, 171, 2-3; 173, 2-3; VII, 169, 2; 171, 1). This distinction may, therefore, have more to do with the kind of persons we are dealing with than the nature of the time they were living in. Herodotus is not sceptical about the existence of Minos, nor does he seem to doubt whether he controlled the sea or

<sup>56</sup> Hartog (1991) vi; but see Romm (1998) 24 for a somewhat different appraisal: "His opening question about *aitiê* is answered not by a Thucydides-style analysis but by his own choice of a starting point for the narrative: the moment at which Asian imperialism, in its relentless quest for new territory, first encroached upon the outer fringes of the Greek world."

not. He just belongs to another generation — he was not human.<sup>57</sup> This might though still imply a temporal framework. Polycrates and Croesus were both active after the middle of the sixth century, which means that Herodotus would be dealing with a tradition going two or three generations back.<sup>58</sup> But if we return to book one, and how Herodotus continues his narrative, having identified Croesus as the first, he immediately plunges far beyond Croesus. The Cimmerians attacked the Greeks before Croesus and in I, 15 he goes even further back, when he claims that Gyges also attacked the Greek *poleis* in Asia Minor. These were definitively not gods, and there is no indication that he doubts any of these stories. They are just as much a part of his ἱστορίη as the story of Croesus.

And if the phrase πρῶτος τῶν ἡμεῖς ἴδμεν is anything to go by, it appears that Herodotus finds no trouble using it of people who lived long before Croesus. Arion was the first, as far as we know, to compose and name the dithyrambos (I, 23, 7), the Lydians were the first to use gold and silver currency (I, 94, 1) and Gyges was the first foreigner, as far as we know, to place offerings in Delphi, i.e. the first after Midas (I, 14, 2). That Herodotus may have had some evidence to back up these stories, e.g. the offerings he saw in Delphi, does not change the fact that *in principle* there is nothing wrong in claiming knowledge about very ancient persons and events. And as far as Herodotus' ἱστορίη goes, we will see in the next chapter that Herodotus applies ἱστορίη in dealing with very ancient stories, i.e. Heracles and Helen.

<sup>57</sup> See Vandiver (1991) 144-148.

<sup>58</sup> With the exception of the information he gets in Egypt from the Egyptians and when there is some visible evidence to support a story. See Rhodes (1994) 159 and Shimron (1973) 47, who argues that Herodotus seems to have been satisfied with information he received from oral sources that reached two to three generations back. When it was within this time frame he was ready to refer to it by οἶδα. This is supported by the study of Thomas (1989) 123-131, according to which the leading families in Greece seem to have had detailed traditions for only three or four generations back. But see Murray (1987).

But why Croesus, then? The attacks of the Cimmerians, of Gyges and his sons until the time of Croesus are described as raids. Croesus, on the other hand, subjugated the Greek *poleis* and had them pay tax, apart from those he befriended. And he was preparing to attack the islands (I, 27, 1).<sup>59</sup> Excluding the "old stories" his was the first serious contact with Greece.

It is clear from the "second" proem, as well as from the "first", that Herodotus is not exclusively interested in the war and the causes of it.<sup>60</sup> The war belongs to the remarkable works of men, but there are other remarkable things as well that deserve to be preserved. This is amply borne out in the rest of the work. Even though it is possible to interpret every ethnographic digression as having a function in the overall narrative of the great war, it would be going too far to claim that it was their *only* function. The description of Egypt is not just there to show what a great country the Persians managed to submit to their rule, which again shows what a great power Persia was. It does this as well, but it is not its only function in the narrative. Egypt was also interesting for its own sake, i.e. apart from its role in the *History* of Herodotus. Looking at the *History* as a whole, from above as it were, we can see how the Egyptian logos fits into the overall scheme of the narrative. But that is not all the Egyptian logos is about.

### 5. New-Simonides on Plataea.

Until recently the earliest extant example of a work dealing with the Persian wars was the *Persians* of Aeschylus, performed 472 in Athens. The action of

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<sup>59</sup> See Harrison (2000a) 201-2.

<sup>60</sup> Contra Nagy (1990b) 250.

the play takes place at the court of Xerxes around the time the news of the defeat at Salamis are reaching the court, and it ends with Xerxes returning home a beaten man in torn robes. Before he arrives, at the end of the play, we hear news of the war from a messenger, who just about managed to escape from Greece. We are told that the best of the Persians died shamefully, by the most inglorious fate (δυσκλεεστάτῳ μὶν ὄρω, 444), we hear about the fate of various noteworthy Persians, mostly killed, and the role of the Athenians is stressed.<sup>61</sup> This is a celebration of the Greek victory by showing the effect it had on the other side.<sup>62</sup> Through the reconstructions of Parsons and West we now, since 1992, have a part of a poem by Simonides on the battle of Plataea that is probably earlier than Aeschylus' *Persians*. Simonides' account seems to be from a Spartan perspective. From Herodotus we learn how hard it was for the Greek *poleis* to work together in their defence. And the alliance did not last long. The Athenians controlled the Delian League, militarily and financially, carrying on the defence against Persia.<sup>63</sup> The Spartans were not a part of this alliance and the relations between Athens and Sparta, never good, deteriorated rapidly. The result we read about in Thucydides. One thing the Athenians and Spartans did not agree on were their respective roles in the great war. This was important for the internal struggle of Athens and Sparta, as it involved looking for support from the other Greek *poleis*. Being regarded as *the* defender of Greece was a weapon in the battle for support within Greece. With the increased self-interested domination of Athens over the League the

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<sup>61</sup> See Harrison (2000b) 61-65 and Cartledge ed. (1998) 173-4 for important qualifications to this view.

<sup>62</sup> On the competitive nature of κλέος, see Goldhill (1991) 70.

<sup>63</sup> See e.g. Hornblower (1983) ch. 2.



Simonides thus explicitly compares and contrasts his own poem with Homer's. He has the same objective as Homer, i.e. to glorify and make immortal the deeds of the Greeks (if lines 15 and 28 are properly reconstructed). What Homer did for the heroes at Troy, Simonides will do for the heroes from Plataea. But whereas Homer, according to Simonides, received the whole truth<sup>73</sup> from the Muses, Simonides needs the Muse only to assist him. He is not a medium through which the Muses speak, guaranteeing the truth of the account. This can partly be explained by a different attitude towards poetry. Already Hesiod claims that the Muses can deceive,<sup>74</sup> though *he* happens to receive the truth from them,<sup>75</sup> and the attitude towards them changes radically through the archaic period. The role of the Muse(s) in Stesichorus and Pindar, for instance, has become even more problematic,<sup>76</sup> and it eventually becomes a literary convention to call upon the Muses for inspiration.<sup>77</sup> But this is not the whole story, at least as far as Simonides is concerned. The Persian wars took place in his own lifetime. He was, therefore, unlike Homer,<sup>78</sup> writing about contemporary events. In addition to that, Simonides was well known throughout antiquity for having invented a mnemonic technique and he thereby made the Muses redundant. As Detienne puts it: "... with Simonides, memory

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and that one of the reasons for suggesting κλέος is probably that there is something immortal missing which belongs to men.

<sup>73</sup> Or the divine song, see n 85.

<sup>74</sup> *Theogony* 27-28.

<sup>75</sup> Kranz (1961) 13: "Jene nächtliche Vision hat Hesiod dazu geführt, gleich zu Werkanfang die Stimme über sich selbst berichtend zu erheben, gegen den ionischen Brauch, und wenn er dabei die ihm persönlich Erschienenen sagen läßt, sie wüßten viel Falsches zu sagen, das dem Wahren nur ähnlich ist, doch auch, wenn sie wollten, die Wahrheit zu verkünden, so muß hier die Meinung sein: ihm werden sie zum Unterschied von anderen Dichtern — auch zum Unterschied von Odysseus τ 203 — das Wahre sagen."

<sup>76</sup> Cf. Pindar's "Provide abundance of it [sc. αἰδάν] from my μήτις" *Nem* 3.9.

<sup>77</sup> Nagy (1989) 23-24. According to Finkelberg's recent study on the use of the Muses in elegy, they were only invoked on occasions "on which the poet finds himself engaged in evoking past events, whether traditional or historical." Finkelberg (1998) 162. Cf. Plato's *Phaedrus* 245a.



became a secularised technique, a psychological faculty available to all via definite rules that brought it within everyone's reach."<sup>79</sup> He was also among the first poets to practise poetry as a craft, celebrating humans, as opposed to gods or heroes, and charging for it.<sup>80</sup> Poetry as a craft should be distinguished from inspired poetry, e.g. the Homeric singers,<sup>81</sup> "for whom speaking *Alêtheia* came as naturally as breathing."<sup>82</sup>

It is interesting to compare this with Choirilos and how he embarks on his epic account of the Persian wars.<sup>83</sup> He most probably based it on Herodotus,<sup>84</sup> when he re-established the genre of epic poetry as epic history by writing about the Persian wars.<sup>85</sup> Aristotle quotes these as the opening lines of Choirilos<sup>86</sup>: ἤγεό μοι λόγον ἄλλον, ὅπως ᾿Ασίης ἀπὸ γαίης ἦλθεν ἐς Εὐρώπην πόλεμος μέγας . Why "another *logos*"? In a scholion to this (PEG

<sup>78</sup> Cf. *Il* 2.485-6: ὑμεῖς γὰρ θεαί ἐστε, πάρεστε τε, ἴστε τε πάντα, ἡμεῖς δὲ κλέος οἶον ἀκούομεν, οὐδέ τι ἴδμεν. See also Ibycus fr. 263 Page, 23-6.

<sup>79</sup> Detienne (1996) 110. Cf. Calame (1995) 78: "In the absence of a mnemonic technique backed up by some system of writing, the production of the text must depend solely on the poet's memory, which is made divine by inspiration."

<sup>80</sup> See H. Fränkel (1962) 346; Segal (1989). Ibycus' on Polycrates (263 Page) is another well-known example. See Goldhill (1991) 116-19; Bowra (1961) 250-57 for a somewhat pessimistic interpretation of this development.

<sup>81</sup> See Finkelberg (1998) *passim*. She is concerned with the rise of fiction in ancient Greece, and distinguishes between what she calls "poetics of truth" and "poetics of fiction", also called "the 'inspiratin:art' dichotomy" with a clash at some point in the fifth century (21). See also Nagy (1989) 23-4, who distinguishes between *aoidos* and *poêtês*, the first being divinely inspired and the second "a master of *technê*". Aristotle's *Poetics* marks the culmination of this trend.

<sup>82</sup> Detienne (1996) 109.

<sup>83</sup> Hermeias, commenting on Plato's *Phdr* 245a, takes Choirilos as an example of a poet who relies on τέχνη as opposed to μανία. See for the identification of this Choirilos as the Samian, as opposed to the Iasian, Hollis (2000).

<sup>84</sup> Huxley (1969). Choirilos, if he based his account on Herodotus, is an extreme case of a poet as a craftsman. He put on verse what was already written in prose!

<sup>85</sup> According to the Suda (PEG T1), he and Herodotus were lovers. It is not clear how extensive Choirilos' poem was. Did it only involve the invasion of Xerxes? The invasions of both Daraïos and Xerxes? Possibly some ethnographic material as well? It is called by different names in the sources, among them: PEG T6: Χοιρίλου ποιήματα Βαρβαρικά· Μηδικ[ά]· Περσ[ικά] PEG T1: ἡ Ἀθηναίων νίκη κατὰ Ξέρξου.

F2) Choirilos is quoted as complaining that he has nowhere to go, as everything has been used up. He refers, enviously as it seems, to the blessed one, who was a servant of the Muses and skilful in song, when the meadow was unshorn.<sup>87</sup> All he, and his fellow poets, are left with are arts that have reached their limits (πείρατα τέχναι), and they have nowhere to go. They look around and everything is already taken. This must mean that, as Choirilos saw it or at least wanted to present it, the traditional subjects of epic poetry had been more than adequately treated, and that he, therefore, must turn towards more recent events. He uses the Persian Wars as a substitute. In this way he stresses that this is an unusual subject for epic poetry and he seeks justification for this. But this is hardly all there is to it. By writing about the Persian wars in epic verse he is giving them the status of what deserves treatment in epic poetry, i.e. he is saying that the Persian wars deserve the same treatment, and status, as the Trojan War. Simonides, on the other hand, by choosing another form, elegy, stresses the difference between himself and Homer (cf. αὐτὰρ ἐγώ).<sup>88</sup> While Choirilos seems happy to embrace the old model of epic poetry for his treatment of the Persian Wars,<sup>89</sup> Simonides stresses his independence from this — but at the same time stressing that he wants to do for the heroes of Plataea what Homer, relying on the Muses, did for the heroes from Troy. Common to Simonides and Choirilos, as well as Herodotus, is that they deal with events that took place in recent human memory.

There are some obvious similarities between Herodotus and Simonides. They are both concerned with the κλέος of past deeds, but whereas

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<sup>86</sup> *Rh* III, 14, 6 (PEG F1). He does not mention Choirilos by name here, but as he has just before talked about him, it is generally assumed that these lines are by Choirilos.

<sup>87</sup> Ἄ μάκαρ, ὅστις ἔην κείνον χρόνον ἴδρις αἰοδῆς, Μουσάων θεάπων, ὅτ' ἀκήρατος ἦν ἔτι λειμών. He is here describing the epic poet, not himself, as a servant of the Muses. Contra Finkelberg.

<sup>88</sup> See Stehle (1996).



Simonides seems to be bestowing κλέος on the Greek heroes Herodotus is concerned with preserving the κλέος that is already there. He does not want past deeds (ἔργα) to become ἀκλεᾶ. And it is not only the glory of Greece he is interested in, as he puts barbarian deeds on an equal footing with Greek deeds. In addition, there is no indication in Simonides that he was interested in why the Greeks and barbarians fought each other. His is a celebration, as Aeschylus' tragedy is a celebration, and not a critical appraisal of the tradition. Which is not to say his account is not interested. Quite the contrary. But the role of ἱστορίη in Herodotus' proem points to something different, an explicit recognition of proceeding according to a method. In particular the combination of ἱστορίη and αἰτίη indicates that something significantly different is going on.<sup>90</sup>

Writing about the Persian wars Herodotus and the rest were not processing raw data. Right from the end of the war it was subject to celebration in song, paintings, buildings and stories told about it. Each version was according to the interest of the author, or the interest of the patron. This might be the function of the Persian and Phoenician logoi at the start of Herodotus *Histories*. They show us, the readers, from the start that stories about important events are never straight.<sup>91</sup> This is the condition he works in.<sup>92</sup>

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<sup>89</sup> Instead of "modernizing the old" he "archaized the new". Haüßler (1976) 78.

<sup>90</sup> Romm (1998) 20: "If the central segment of Herodotus's opening sentence reads like something Homer might have said, the clauses on either side [i.e. those including ἱστορίη and αἰτίη] are distinctly un-Homeric."

<sup>91</sup> As Dewald (1999) 224-6 has recently argued. This might be reflected in Herodotus' use of the term ἀτρεκέλη instead of ἀκρίβεια. See e.g. Lateiner (1989) 10 n 20.

<sup>92</sup> See e.g. Murray (1996) 367.

## 6. Herodotus the logios.

But this view has been challenged by Nagy<sup>93</sup>, who has proposed a new interpretation of Herodotus, comparing and contrasting him to Pindar and more generally the poetry of praise. The relation of ἱστορίη to αἰτία in Herodotus' proem plays the leading part in his interpretation. Nagy finds Herodotus more related to Pindar and his poetry of praise than is commonly assumed. Pindar and Herodotus are presented as competitors to be the masters of the Homeric "tradition",<sup>94</sup> respectively in the media of poetry and prose. Pindar as an αἰδοῖς and Herodotus as a λόγιος. The comparison and confrontation of Pindar with Herodotus are admittedly a part of a larger study,<sup>95</sup> but Nagy makes some fairly substantial claims about Herodotus, based in particular on the first few lines of his work. According to Nagy's approach the question of what a "composition" says about its "performance or potential performance" as well as what it says about "whoever is the composer"<sup>96</sup> is fundamental. "What makes words authoritative is the value that a given society attaches to their performance. ... The notion of authoritative speech ... is conveyed in Greek by such key words

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<sup>93</sup> Nagy (1987) and (1990b). Connor (1993) argues a case similar to Nagy's. According to him, Herodotus uses the Homeric notion of ἵστωρ as a model for himself in navigating through the discrepant local traditions of the Greeks. This supposedly explains his practice of relating different versions and then choosing one; cases where he relates absurd stories without showing any incredulity – he didn't have alternative accounts to choose between; why Thucydides and Xenophon avoided the term ἱστορία. Connor, then, turns this into a developmental hypothesis: Herodotus started by using the model of the ἵστωρ, but faced with the problems and limitations it posed, changed his ways and felt increasingly free to express his own views. "The historian asserts the right to *investigate* topics that he knows are important for the proper *memorialisations* of his subject." (15, my emphasis) Note that enquiry and proper memorialisation are what Herodotus does when he has freed himself from the model of ἵστωρ. I concentrate on Nagy in the present discussion, as he is more consistent in his methodology.

<sup>94</sup> "Tradition" is one of the most basic concepts in Nagy's approach but difficult to pin down.

<sup>95</sup> His perspective is Indo-European linguistics explicitly modeled on Benveniste. Nagy on Indo-European linguistics: "the attempt to reconstruct a proto-language translates into an attempt to recover various patterns in society as articulated by language." Nagy (1990a). His modest attempt is to do this for Greek society.

as **ainos**.<sup>97</sup> In the introduction Nagy has the following summary of ch. 8, one of his key chapters on Herodotus.<sup>98</sup> "The prime example of early Greek prose is the discourse of Herodotus, whose language makes it implicit that he is a **logios** 'master of speech', a description that is pertinent to the dichotomy, made explicit in Pindar's language, between **logios** 'master of speech' and **aoidos** 'master of song'. The prose of Herodotus, like the poetry and song of the **ainos**, is a speech act of authority."<sup>99</sup> Nagy's claim is, therefore, that Herodotus is working within the dichotomy of *αοιδός* and *λόγιος* and presenting himself as a *λόγιος*. This dichotomy must, on Nagy's account, have been a pattern in Greek society at the time Herodotus was composing his narrative, and made explicit by Pindar.<sup>100</sup> What is happening, according to Nagy, is that Herodotus, as well as Pindar, is trying to appropriate the "discourse" of Homer by claiming identity with it. And he does this as a *λόγιος* in opposition to an *αοιδός*, represented by Pindar.

Nagy relies heavily on the proem of Herodotus and the lines immediately following for his interpretation. It has long been recognized that this has some essential similarities with the Homeric proems. This is usually explained by the fact that Homer was the only literary precursor Herodotus could to model his large scale narrative of the war on. But Nagy's theory of appropriation goes much further. In the proem Herodotus announces as the subject of his *ιστορίας απόδεξις* the glorious deeds of both Greeks and barbarians and among them (or in particular) what was the reason, or who was responsible, (*αἰτίη*) for them fighting each other. In the first line of ch. 1 (immediately after the proem) he talks about what the Persian and Phoenician

<sup>96</sup> Nagy (1990b) 9.

<sup>97</sup> Ibidem. I follow Nagy's typographical methods in the quotations from him.

<sup>98</sup> An enlarged edition of Nagy (1987).

<sup>99</sup> Nagy (1990b) 13.

<sup>100</sup> Whether this is a justified reading of Pindar is another question.

λόγιοι have said about the reasons for this enmity. Nagy takes this to be implicitly saying that Herodotus is a λόγιος.<sup>101</sup> And λόγιος is surely among Nagy's performative/authoritative words. The argument must be (there is no argument for this in Nagy) that, as Herodotus is himself inquiring into the reasons for the enmity, that is doing the same as the Persian and Phoenician λόγιοι, he is implying that he is himself a λόγιος. But a serious problem for this particular interpretation of Herodotus, as opposed to a general criticism of Nagy's approach, is the fact that Herodotus dismisses the arguments of the λόγιοι in I, 5, 3, three Oxford pages into the work.<sup>102</sup> Here he claims only to be interested in what *he himself* knows about the subject. He seems, therefore, to distance himself from the tradition of the λόγιοι. It is difficult to argue from this that the discourse of Herodotus is, implicitly or explicitly, claiming the authority of the λόγιος, "master of speech" as opposed to that of the ἀοιδός, "master of song".<sup>103</sup>

Another related issue in the "Homeric strand" of Herodotus is the subject matter of his ἀπόδεξις. The purpose of it is that the deeds of Greeks and Barbarians alike won't become inglorious. This Nagy relates to Homer and Pindar, and correctly so. Herodotus has this purpose in common with Pindar and Homer, as well as Simonides and many more. But Nagy completely ignores the differences between these authors when he discusses the issue. He seems to assume that as they are all interested in the κλέος of past deeds they

<sup>101</sup> In his reply to objections in *Arethusa* 20/1-2 (1996): 210, Nagy says: "... the syntax of the transition from the proem to the first sentence of the *Histories* proper is for us *explicit* evidence that Herodotus considered himself a **logios**. It is only for Herodotus that this consideration is implicit, not explicit." (Italics mine.) He goes on to say that he thinks Herodotus had the likes of Hecataeus in mind when he used the word λόγιοι.

<sup>102</sup> Cf. Hartog (1991): vi, referring to Nagy (1987).

<sup>103</sup> This is in addition to problems to do with Nagy's rendering of λόγιος as "master of prose". He finds it "anachronistic" to translate λόγιοι in Herodotus I, 1, 1 as "historians". I agree. But the only scholar he can find to argue against on this point is Farnell (1932) 116! But it is not self-evident that, because it does not mean "historians", it must mean "masters of prose".

are basically doing the same.<sup>104</sup> Above I tried to show through the comparison of Herodotus and Simonides that they are doing essentially different things, even though they share *some* objectives.

So much for the Homeric strand of Herodotus. Nagy also finds a Hesiodic strand in him. This has to do with the theme of the just king in Hesiod's *Erga*, but oddly enough the argument must start in Homer's *Iliad* and hardly involves Hesiod at all. Nagy refers here to the passages from the *Iliad* discussed above. This is a "Hesiodic" strand, as Nagy needs to read the figure of ἵστωρ into the discussion of the just king in Hesiod's *Erga*.<sup>105</sup> This Hesiodic strand is, according to Nagy, very much present in the proem. Herodotus also uses ἱστορίη in conjunction with αἰτίη. This means, according to Nagy, that the stated purpose of the *entire narrative* of Herodotus is to inquire into the cause of the enmity between Greeks and Barbarians.<sup>106</sup> There is a way to read the *Histories* as being largely concerned with who is responsible for the war between Greeks and barbarians, in so far as it is about the expansion of the Persian empire, or the *Barbarians* in general,<sup>107</sup> and its unavoidable clash with Greece?<sup>108</sup> This interpretation requires us to take the notion of responsibility or cause (αἰτίη) very broadly.<sup>109</sup> It is important to distinguish between the explicit

<sup>104</sup> Cf. Goldhill (1991) 72.

<sup>105</sup> Gagarin (1986) does the same in his account of the quasi-judicial ways of settling disputes in archaic Greece. He does not, though, have Nagy's problem of identifying this with an institution of the ἵστωρ.

<sup>106</sup> "The juridical aspect of Herodotean narrative [sic] - that it can establish who is *aitios* 'responsible' for the ultimate struggle between Hellenes and Persians - is articulated already in the proem of the *Histories*, in that the purpose of the entire narrative is said to be an inquiry into the *aitia* 'cause' of that struggle." Nagy (1990b) 250. Note that Nagy translates ἱστορίη with "inquiry", even though he wants to argue that it really means "arbitration".

<sup>107</sup> Herodotus does not start his narrative with Cyrus the Persian, but Croesus the Lydian and his ancestors.

<sup>108</sup> E.g. Evans (1991) 7.

<sup>109</sup> Evans (1991) 33: "But in fact, Herodotus made no consistent effort to discern over who was guilty of causing the war, in spite of his announced intention in his proem, for it had no bearing upon the fundamental cause of Persian expansionism."

discussion of who is to blame in I.1-4 and the theme of Persian expansionism that runs through the work, especially since this theme is not obviously connected with the discussion of αἰτία in the proem and the following chapters. Herodotus introduces the theme of who is to blame, discusses what the Persian and Phoenician λόγοι have said about it, gives his own answer (Croesus the Lydian) and goes on with his narrative. It seems hard to conclude from this that the function of the entire narrative is to inquire into who is to blame. Even less plausible is Nagy's approach. He *deduces* from the proem and the first line of I, 1, 1 what the function of the entire narrative is.

The strength of Nagy's methodology is to read Herodotus purely on the surface and draw comparisons to Homer, Hesiod and Pindar. He thus sees the link between ἱστορίη and αἰτία in the proem as evidence of an appropriation of a Homeric discourse. His weakness is not paying due attention to the surface of the texts he is reading. Homer does not, in *Iliad* XVIII or XXIII, explicitly connect the figure of the ἵστωρ to αἰτία, and Nagy therefore resorts to reading the "ultimate juridical problem" of the *Iliad*, i.e. who is responsible for the anger between Agamemnon and Achilles, into the scene on the shield of Achilles.<sup>110</sup> But this is not purely a surface reading. In addition Nagy faces problems of why this kind of reading does not apply to more authors than Herodotus. What about Aristotle, for instance? He explicitly connects ἱστορία not only with αἰτία but also with ἀπόδειξις (*HA* 491a7-11; *PA* 646a8-12; *APr* 46a17-27). Nagy is forced to draw an arbitrary temporal line after Herodotus in order to avoid these problems.

In sections 1-3 I tried to show how manifold the material we are dealing with is, when we try to find what Herodotus might be referring back to by his use of ἱστορίη. He might be relying on Homer as an inspiration for the



overall narrative frame of his *Histories*, without referring to him by his use of ἱστορίη.<sup>111</sup> The *Histories* are not a one-dimensional work, and Herodotus had a wealth of material, both written and oral, to inspire him.<sup>112</sup> The term ἱστορίη he might have used inspired by Ionian natural philosophy<sup>113</sup>, Hippocratic medicine, the use of the verb in tragedy, or a combination of these. But as soon as he had used it in such a prominent place as the proem it was bound to influence the way later authors thought about their enterprise, be it in "history" or "natural history". All this material is invaluable to understand Herodotus' background. But there is no way any of these early uses of the ἱστορ- vocabulary can provide anything like a key to what Herodotus was doing. What it shows is a great variety of meanings and uses when it comes to ἱστορ-. This again points to the importance of Herodotus for the later history of ἱστορίη. It is he who brought it to its prominence and focused its meaning.

### 7. Herodotus proem and Hecataeus FGrH I, F1.

Now I will turn to the two authors who are usually thought to be most relevant to an interpretation of Herodotus, namely Hecataeus and Thucydides. Felix Jacoby told a great, and still very influential, story about the development of historiography in ancient Greece. According to this story Herodotus' only predecessor was Hecataeus from Miletus. Herodotus followed in his footsteps,

<sup>110</sup> As a general interpretation of the Shield this is not bad, and indeed what Anderson (1976) did.

<sup>111</sup> Romm (1998) 16-22.

<sup>112</sup> Particularly if we accept Fowler's (1996) attempt to reverse the judgement of Jacoby concerning the date of the historians mentioned in Dionysius from Halicarnassus (*Th* 5.1: Usener-Radermacher I 330.7) as being either Herodotus' contemporaries or even older than him.

started as a geo/ethnographer but slowly realised the importance of the Persian invasion and Greece's victory over Xerxes. He turned his attention to this event and wrote its history. Thucydides came along and completed the development.<sup>114</sup> Hecataeus was, undoubtedly, one of the most important influences on Herodotus, in that he wrote about foreign people and their customs and geography as well as about the traditional tales of the Greeks. Herodotus knew his work well, and frequently criticises him. This is not the place for a thorough comparison of Herodotus and Hecataeus, but comparing the proem of Herodotus to Hecataeus FGrH I F1, in a sense a parallel text, does reveal some essential similarities.

Hecataeus opened his account of the *Genealogies* with the following words (FGrH I F1; Fowler F 1):<sup>115</sup>

Ἑκαταῖος Μιλήσιος ὧδε μυθεῖται· τάδε γράφω, ὥς μοι δοκεῖ ἀληθέα εἶναι· οἱ γὰρ Ἑλλήνων λόγοι πολλοί τε καὶ γελοῖοι, ὥς ἐμοὶ φαίνονται, εἰσίν.

What λόγοι? Stories of the past, stories of heroes, gods and people, and their interactions. Each *polis* had its own "mythical" tradition, and someone like Hecataeus, who travelled and described the world, was bound to hear many tales. But why are they laughable? Are they laughable because they are many? If the *number* of tales makes them laughable it can only be if a number of tales *about the same subject* tell a different story *about it*. Locally the tales, e.g. about Heracles, had independent life and there was no authority (a book or something else) that could keep a check on the tradition. This multiplicity of

<sup>113</sup> Though I must admit to some scepticism about the value of this category.

<sup>114</sup> According to the Suda (Fowler T 1) Hecataeus was the first to write ἱστορία in prose.

<sup>115</sup> Demetr *Eloc* 12. Demetrius quotes this as an example of the "disconnected" style (διηρημένη), characteristic for early prose and Herodotus in particular.



discrepant tales must have been an impetus to rationalization or systematisation. And not just within the Greek world, but also in a universal perspective. Hecataeus travelled abroad, e.g. to Egypt, and there he also found different tales, i.e. tales different from the Greek tales. We would not be worried about the Egyptian "mythology" being different from our "religious" tales, but a Greek who, on the one hand, believed there only was one universal truth about gods and heroes, and, on the other, was tolerant towards different traditions (as someone who had experienced the discrepant tales of the Greek *poleis*) must have reacted to a totally different tradition abroad as he believed it to be about *the same* heroes and gods. But how? Are the Greek tales laughable compared to the tales found in other countries,<sup>116</sup> or because they are internally discrepant<sup>117</sup>? Or both at once? There is a third possibility. Hecataeus might have found the tales laughable because he personally found them incredible (or irrational). The absurdity of the tales is, according to this view, the result of Hecataeus' rationalism, i.e. his frame of mind, and the multiplicity and discrepancy of the tales is only corroborative.<sup>118</sup> The tales are absurd or unbelievable *before* he compares them with other tales. Thus Hecataeus, for instance, corrects a tale about Heracles as it cannot be true viewed in the light of his knowledge of geography (he had travelled the world),<sup>119</sup> and in another place he claims that Cerberus was not a dog who guarded the gates of Hades but rather a snake in the desert.<sup>120</sup> Dionysius from Halicarnassus says that Hecataeus was uncritical of the tales he heard and that he reported them as he

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<sup>116</sup> Cf. Momigliano (1990) 32.

<sup>117</sup> Cf. Detienne (1981) 134-145.

<sup>118</sup> Brillante (1990) 126 n 9.

<sup>119</sup> Arr *An* II, 16, 5 (FGrH I F 26). In this case it is difficult to see what part of the argument belongs to Arrian and what to Hecataeus. Herodotus could be just as dismissive of Greek λόγοι, cf. II, 45, 1 on Heracles: λέγουσι δὲ πολλὰ καὶ ἄλλα ἀνεπισκέπτως οἱ Ἕλληνες. He goes on to refer to this as a μῦθος. I discuss this in chapter II.

<sup>120</sup> Paus III, 25,5 (FGrH I F 27). Pausanias describes this as being εἰκότα.

heard them (*Th* ch. 5). Discussing the Pygmies he does just that.<sup>121</sup> He reports a fantastic tale exactly as he heard it. But he is not uncritical. He claims that it is an unbelievable tale but, as he does not know how to correct it, he just tells it as he heard it.<sup>122</sup> It must be kept in mind that Dionysius wanted to reserve the credit for *critically* evaluating tradition to Thucydides, and that he claimed that every historian before Thucydides was uncritical.<sup>123</sup>

What are we to make of this? Hecataeus was not without a critical mind (who is?), but what was the degree and nature of his criticism? In frg. 1 he claims that he is going to tell what seems *true to him*. This claim to truth in relation to the multiplicity of tales is very important. There is only one possible truth, only one story can be true. This is a challenge to anyone interested in his own past history or tradition. The self-confident Hecataeus claimed to know the truth of the matter. Herodotus does not claim, in his proem, that he knows the truth but only that he is going to tell what he has found out. We must also note the difference in how they introduce themselves. Hecataeus presents himself in the nominative as the subject of the verb "to say" and stresses his own personal point of view on the Greek traditional tales as well as his confidence in having attained the truth. Herodotus, on the other hand, presents himself in the genitive to ἱστορίῃ, which again is in the genitive to ἀπόδεξις. The work is a presentation of Herodotus' ἱστορίῃ. As an author Herodotus presents himself at two removes from his subject, and between him and the account is ἱστορίῃ. There is thus much more stress on the person of the author in Hecataeus' proem. He, personally, is the arbiter (or master) of truth.

<sup>121</sup> Eust III, 6 (FGrH I F 328).

<sup>122</sup> γελοῖον μὲν καὶ οὐ πιθανόν, λέγεται δέ. Contra A.B. Lloyd (1975) 135-136. Cf. Herodotus II, 123; V, 85-88.

<sup>123</sup> ἔπειτα κατὰ τὸ μηδὲν αὐτῇ μυθῶδες προσάψαι [sc. Θουκυδίδης], μηδ' εἰς ἀπάτην καὶ γοητείαν τῶν πολλῶν ἐκτρέψαι τὴν γραφὴν, ὡς οἱ πρὸ αὐτοῦ πάντες ἐποίησαν, ... ch. 6. (Usener-Radermacher I, 333, 3-5.)

"They are all wrong, but I can tell you the truth of the matter."<sup>124</sup> But it must be noted that Hecataeus' polemical and arrogant tone does not exclude critical intuition or the ability to critically evaluate different traditions. And he could refer to the multiplicity of versions for support. But his method to get at the truth was to rationalize the tales he heard, with his own sense of what is possible and likely to have happened, partly based on his geographical knowledge, as a criterion. The contrast is with Herodotus' stress on the mediating role of ἱστορίη, which is why, after all, why we know history as "history".<sup>125</sup>

#### 8. Herodotus' proem and Thucydides' ditto.

The first words of Thucydides' book are:

Θουκυδίδης Ἀθηναῖος ξυνέγραψε τὸν πόλεμον τῶν Πελοποννησίων καὶ Ἀθηναίων, ὡς ἐπολέμησαν πρὸς ἀλλήλους, ἀρξάμενος εὐθύς καθισταμένου καὶ ἐλπίσας μέγαν τε ἔσεσθαι καὶ ἀξιολογώτατον τῶν προγεγενημένων

Like Hecataeus and Herodotus, Thucydides introduces himself by name and city, his city being particularly important as it is one of the opposing parties in

<sup>124</sup> Pohlenz (1973) 2: "Während aber der selbstbewußte Hekataios jedenfalls in seinem genealogischen Werke seine Legitimation einfach auf die Überlegenheit seiner subjektiven Einsicht gründet, erklärt Herodot, er wolle darlegen, was er erkundet hat ... " Cf. Calame (1995) 92-3.

<sup>125</sup> Thomas (2000) 163: "What is clear, is that Herodotus calls Hecataeus a *logopoios* along with Aesop (II 143.1; V 36.2; II 134.3) — rather than a sophist or a *sophos* or any other possibility — and that his use of *historie* of his own work suggests that he wished to present it in a different light."

the war he writes about and in which he took an active part.<sup>126</sup> Thucydides' subject is a war, just as the central subject of Herodotus' narrative, as well as Homer's, was a war, and Thucydides' claim that his war is more memorable than other wars in the past must, to a significant degree, be polemically aimed at Herodotus, his literary predecessor and near contemporary.<sup>127</sup> In the first twenty chapters of book one (the so-called *Archaeology*<sup>128</sup>) Thucydides argues for this claim (as well as for the importance of sea power) on the ground that Athens and Sparta were both, by that time, great powers. The most significant difference, from a historiographical point of view, between the wars of Herodotus and Thucydides is that whereas Herodotus' war was an event of the past, Thucydides chronicled the events of his war as they happened. Thucydides thus chose a subject, a historical subject, before it happened or was completed (at least he claims to have done so).

There is another important contrast to Herodotus in Thucydides' introductory statement. Thucydides collected and wrote down (the history of) the war. Herodotus uses ἀπόδεξις which means "showing forth" or "performance" and does not imply writing.<sup>129</sup> In Marcellinus' *Life of*

<sup>126</sup> "For an Athenian, the natural expression would be πόλεμος ὁ πρὸς τοὺς Πελοποννησίου" "the war against the Peloponnesians", and perhaps a trace of this can be seen in his mentioning the Peloponnesians first." Hornblower (1991) ad loc. Thucydides tries to represent himself as an impartial reporter. Herodotus also belonged to one part of a conflict, but he was composing his work only for this part, i.e. the Greeks, and not for the other part, i.e. the Persians. But even he does not describe it as the "war against the Persians" but as "an inquiry into why the Greeks and Barbarians fought each other". The perspective is universal, and he also presents himself as an impartial reporter.

<sup>127</sup> Hellanicus should also be mentioned. He is the only rival Thucydides mentions by name (I, 97, 2).

<sup>128</sup> Not in our sense, but meaning "an account of early events".

<sup>129</sup> Rosén (1993) has argued that ἀπόδεξις as used in Herodotus' proem is not the ἀπόδεξις of ἀποδεικνύναι but the ἀπόδεξις of ἀποδέχεσθαι, "accept" or "receive". One might want to combine this with Connor's understanding of ἵστωρ in Herodotus, as the judge who chooses between alternative accounts. But see Erbse (1997).

Thucydides<sup>130</sup> (54) it is said that when Herodotus *recited* a part of his work Thucydides heard him and wept (ἀκούσας ἐδάκρυσεν). Thucydides says in I 22.4:

καὶ ἐς μὲν ἀκρόασιν ἴσως τὸ μὴ μυθῶδες αὐτῶν ἀτερπέστερον  
φαινέται· ὅσοι δὲ βουλήσονται τῶν τε γενομένων τὸ σαφὲς σκοπεῖν  
καὶ τῶν μελλόντων ποτὲ αὖθις κατὰ τὸ ἀνθρώπινον τοιούτων καὶ  
παραπλησίων ἔσεσθαι, ὠφέλιμα κρίνειν αὐτὰ ἀρκούντως ἔξει. κτῆμά τε  
ἐς αἰεὶ μᾶλλον ἢ ἀγώνισμα ἐς τὸ παραχρῆμα ἀκούειν ξύγκειται.

Thucydides' claim is that he did not write his work trying to please or to achieve immediate fame, but intending it to be useful.<sup>131</sup> One is reminded of his description of the plague where his pronounced intention is to describe it so that one can recognize it if it breaks out again. So too with historical events. Human nature being what it is, they tend to repeat themselves. Thanks to his describing how they happen, one can use his work in the future to detect the same kind of events when they are in the process of happening. He, therefore, writes his *History*, as accurately as possible,<sup>132</sup> and is not concerned with displaying it to the general public.<sup>133</sup> This is most probably a covert criticism of Herodotus. It is interesting that Thucydides is claiming for his narrative similar use as a medical writing. It is definitely not for pleasure.<sup>134</sup>

<sup>130</sup> Late fifth century CE.

<sup>131</sup> Herodotus was a popular subject in parodies, but Thucydides not.

<sup>132</sup> As he twice repeats earlier in chapter 22. The word is ἀκρίβεια in the empiricist (everything included), and not the mathematical (simple deduction), sense.

<sup>133</sup> This does not mean that his work was never read out in any context. But Thucydides claims that *that* is not its essential function, without excluding the possibility of it being read out.

<sup>134</sup> Calame (1995) 93 detects already in the proem, by the combination of the third person and the verb in aorist together with the absence of the deictic, the essential narrative nature of Thucydides' history.

9. *The fame, the shame: the tomb.*

I have tried to pick out some of the most important differences between these three authors, but there are no less revealing similarities. All three introduce themselves in the third person, with a name and a place attached to it. The place can be important to indicate the sympathies in the context of war, but it is more important as an identifier of the author for the individual he is. An individual essentially belongs to a place, and the place takes pride in him — if he is worth it.

Thomas Highgate from Sidcup had fought at the battle of Mons and survived, but was later found hiding in a barn dressed in clothes he had taken from a scarecrow. He was executed for desertion on September the eighth, 1914, the first of around 300 men to die this way during the First World War. Consequently his name was left out when, in 1922, a memorial was erected in his hometown, Shoreham, to those who fought and died during the war. On the fourteenth of March 2000 it was decided, by a vote in Shoreham (the first of its kind), that his name should be included on the memorial. "For years after Private Highgate, 19, was convicted of abandoning Queen's Own Royal West Kent Regiment, mention of his name in Shoreham was a taboo. His family is thought to have left the village in shame, and when the memorial was erected in 1922 no thought was given to including his name. The names of three of his brothers who subsequently died in action are honoured on a monument in Sidcup."<sup>135</sup> Shoreham did not want to recognize its son, nor his family. This example is about faming or shaming your family and home town by your

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<sup>135</sup> Adrian Lee in *The Times*, March 15 (2000) 11. Did the family move to Sidcup and live there pretending that Thomas never existed?

actions in battle, also the primary example of κλέος in the Greek context, together with athletic victories which made Pindar rich. It thus reflects on the discussion above on κλέος in Homer and Simonides. But it also shows the importance of the monument in this context, funerary or otherwise. Jasper Svenbro has argued that the three proems discussed above are in a sense "monumental inscriptions", a bit like "funerary monuments".<sup>136</sup> They identify the author with his work, which is his claim to fame. The result of this, in the case of Herodotus, is that the term ἱστορίη became the name for the discipline Herodotus was recognized as the father of.

A recently (1995) discovered inscription from about the middle of the second century BCE shows just how successful Herodotus was in his hometown.<sup>137</sup> It starts by asking Aphrodite to enumerate all those who bring honour to Halicarnassus. Herodotus is mentioned first among the writers with the words:

Ἡρόδοτος ὁ πεζὸς ἐν ἱστορίαισι Ὀμηρος

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<sup>136</sup> Svenbro (1993) 150. "The works of all these historians thus bear monumental inscriptions in the sense that, seen "from the outside" (this is the first phrase that permits the reader to enter into the work), they refer to their authors in the third person, as if they are absent." Cf. also 150 n 17, and Hartog (1991) xv.

<sup>137</sup> Editio princeps: Isager (1998). See also Lloyd-Jones (1999a-b).



## CHAPTER II

### Reported Knowledge

"For though in all places of the world, men should lay the foundation of their houses on the sand, it could not thence be inferred, that so it ought to be."<sup>1</sup> This is Hobbes' formulation of a common sentiment among enlightenment philosophers about the relative value of history and philosophy. "Philosophy" or "science", based on the faculty of reason, is infinitely more valuable than history, based on the faculty of memory. The remark is made in the context of civil, and not natural, history, as Hobbes is arguing against a position that uses the *historical fact* that unlimited power of sovereignty has never existed to argue for its impossibility. He replies by objecting to the relevance of history.<sup>2</sup> But not only is it irrelevant, it can also be outright dangerous: "And as to rebellion in particular against Monarchy; one of the most frequent causes of it, is the Reading of the books of Policy, and Histories of the antient Greeks, and Romans; ..." <sup>3</sup> History supplies second class knowledge, if knowledge at all, for the feeble minded; knowledge they can use for destructive purposes because it

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<sup>1</sup> *Leviathan* ch. 20.

<sup>2</sup> Cf. Sorell (2000) 84.



supplies them with reasons to act. Civil history has thus no (positive) role in political philosophy, according the Hobbes of the *Leviathan*.<sup>4</sup> The case for natural history is somewhat different. If an explanation of a natural phenomenon is to be possible there has to be a history of this phenomenon. Hobbes thus complains in *De motu* (209) that an adequate explanation of tides is impossible because "there exists no history of the tides". But he was not very interested in doing natural history himself. Hobbes differs from Francis Bacon (whose secretary he was) in that for him, in the words of a recent study, "there is no gradual transition from natural history to science by means of some inductive generalisation."<sup>5</sup> Natural history is, therefore, not a part of science proper.

Hobbes' attitude, which he shared with many of his contemporaries, is a part of the general criticism of tradition and authority, particularly of scholasticism and the authority of Aristotle. He is an interesting example as his first published work was a translation of and introduction to Thucydides' *History* and among his latest writings was *Behemoth*, a history of the English Civil War. The criticism of tradition from the perspective of reason was not an invention of the Enlightenment. It was also a particular pastime of a number of Greek thinkers. A wholesale refutation of all traditional, as well as contemporary, wisdom to be replaced by a new system supplied by the author in question was not uncommon.<sup>6</sup> But reason alone was not in all cases what was to replace tradition. Perception, or your own personal experience, was

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<sup>3</sup> *Leviathan* ch. 29. See in particular Borot (1996) 309.

<sup>4</sup> See e.g. Schumann (2000) 15.

<sup>5</sup> Schumann (2000) 12, cf. also Borot (1996) 319.

<sup>6</sup> See e.g. Lloyd (1987) 56-70 on "Greek Innovation and Egotism": "One after another, the major pre-Socratic philosophers from Xenophanes onward, state or imply that no one else had got the answer right, establishing their own presence in the text with copious criticisms of other writers, their predecessors or contemporaries, named or unnamed, at the limit by criticisms of what everybody else believed."

another foundation for knowledge that had a problematic, though more positive, relation with the past. If what I myself experience is the only secure foundation for knowledge, what can I do with the reported knowledge of people past? And this is not only a problem in relation to reports from or of the past. Reported information from other, foreign, places has similar problems.

This chapter is about the nature and use of reported knowledge, with particular emphasis on reports of and from the past. It is not about history, in the sense of modern historiography.<sup>7</sup> I will start with some instances of ἱστορία where it is used to refer to reported knowledge and then proceed to discuss Aristotle's *Poetics* 9 and 23, where Aristotle uses ἱστορία to refer to what Herodotus was doing, approaching our sense of history. This is a difficult text to use for what it says about history, as ἱστορία is used as the negative pole of a comparison in order to underline the essential nature of poetry. But it does introduce some of the most important systematic aspects of what ἱστορία or history, both in the general and narrower sense, is essentially about according to Aristotle. I then turn to Herodotus and the confrontation of two pasts in book II. The past is a source of knowledge about the past as well as the present and, possibly, the future, and in Egypt Herodotus discovered that the Egyptian past was substantially different from the Greek past. The consequences he draws from this are radical. In the last chapter I concentrated on generic uses of ἱστορίη in Herodotus. This chapter focuses on its use where Herodotus is explicitly doing ἱστορίη. This happens to be in book II.

From history to Hippocratic medicine and the school of the Empiricists, which, for a medical sect, had a particularly strong relation to the history of medicine. For them the past held in store almost everything they needed to

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<sup>7</sup> Finley's classic "Myth, Memory and History" (Finley (1975) 12) makes this distinction and concentrates on history as a systematic study. Given the strict definition of history Finley takes as his departure, it is not surprising that he does not find it among the Greeks.

know about medicine. But their relationship with the past was very complex and, in any case, not static. Some of the key works of the Hippocratic corpus also looked to the past for information about the practice of medicine as well as to claim support for the status of τέχνη for medicine. In the central argument of *On Ancient Medicine* ἱστορίη is used of the collected knowledge or information the τέχνη is based on.

*1. Oratory, poetry and ἱστορία: the use of examples.*

In Isocrates' geriatric composition, the *Panathenaicus*, he constructs a reply, from a Lacedaemonian, to what he, Isocrates, has been saying. The Lacedaemonian comments on the nature of Isocrates' "speech", which is, according to him, deceptively simple on a first reading. On a close reading, on the other hand, it is very difficult, as it is full of ἱστορία and φιλοσοφία (246.6 Bensler; cf. also *Ep* VIII, 4, 7). What Isocrates, the persona in the *Panathenaicus*, has presented is largely a glorification of the past history of Athens and, to some extent (cf. 232 Bensler), a vilification of the past history of Sparta. He does this not just for the sake of reporting these histories, but in order to press his well worn agenda of pan-Hellenism. He deliberates *with* history.

Discussing deliberative oratory in *Rhetoric* I, 4 Aristotle lists five subjects an orator must be able to deliberate about: income, war and peace, the defence of the land, import and export and legislation (1359b19-23). Regarding income (πόροι) it is necessary to be well acquainted with one's own πόλις, its resources and expenditures. But this is not enough (1359b30-32):

ταῦτα δ' οὐ μόνον ἐκ τῆς περὶ τὰ ἴδια ἐμπειρίας ἐνδέχεται συνορᾶν,  
ἀλλ' ἀναγκαῖον καὶ τῶν παρὰ τοῖς ἄλλοις εὐρημένων ἱστορικὸν εἶναι  
πρὸς τὴν περὶ τούτων συμβουλήν.

It is also necessary to be a *ἱστορικός* about other *poleis* in order to deliberate and give advice. This is not knowledge about the *history* of other people and cities, but knowledge about how they go about running their city, including information about costs and means. It is less a particular *kind* of knowledge, as knowledge (or being informed) about certain things, i.e. foreign affairs.<sup>8</sup> The idea is more clearly formulated later, in discussing deliberation on lawgiving (1360a30-37):

χρήσιμον δὲ πρὸς τὰς νομοθεσίας τὸ μὴ μόνον ἐπαίειν τίς πολιτεία  
συμφέρει, ἐκ τῶν παρεληλυθότων θεωροῦντα, ἀλλὰ καὶ τὰς παρὰ τοῖς  
ἄλλοις εἰδέναι, αἱ ποῖαι τοῖς ποίοις ἀρμόττουσιν· ὥστε δῆλον ὅτι πρὸς  
μὲν τὴν νομοθεσίαν αἱ τῆς γῆς περίοδοι χρήσιμοι (ἐντεῦθεν γὰρ λαβεῖν  
ἔστι τοὺς τῶν ἐθνῶν νόμους), πρὸς δὲ τὰς πολιτικὰς συμβουλάς αἱ τῶν  
περὶ τὰς πράξεις γραφόντων ἱστορίαι· ἅπαντα δὲ ταῦτα πολιτικῆς ἀλλ'  
οὐ ῥητορικῆς ἔργον ἐστίν.

It is not only useful to know about constitutions by speculation, but, as in the case of income, this should include knowledge about other people's constitutions. We get a ὥστε δῆλον in two parts (μέν ... δέ). On the one hand there is the use for lawgiving of travelling around the world (cf. Solon), on the other there is the use of histories, written about πράξεις, for political deliberation. 'Ἱστορίαι' contain information and being a *ἱστορικός* consists in, I take it, being informed. Even though this is all useful for rhetoric, it really

<sup>8</sup> Pace Grimaldi (1980) 95: "The main idea in *ἱστορικὸν εἶναι* is: a spirit of inquisitiveness, eager curiosity about, research into." He bases this on the meaning of words in *-ικος*: "a capacity for, or tendency to."

belongs to political science.<sup>9</sup> One of Aristotle's greatest collaborative undertakings was the collection of constitutions and constitutional histories, of which only the *Constitution of Athens* exists.<sup>10</sup> His work on political science, the *Politics*, is based on this collection. These are, therefore, no empty words. What I want to stress here, though, is the use of *ἱστορία* and *ἱστορικός* for knowledge about what belongs to foreign lands and cultures. This is indeed what the bulk of Herodotus' *History* is concerned with. It is obvious that Herodotus is the source for some of the information in the *AthPol* (as well as in the *HA*). And other writers are a source for other things in these works. Written sources are a fully legitimate source of knowledge for Aristotle.<sup>11</sup> The travelling "historian" is thus invaluable.<sup>12</sup>

Aristotle uses *ἱστορία* in the *Poetics* for narratives of events (*λέγειν τὰ γενόμενα*), a sense similar to our "history".<sup>13</sup> As Aristotle says two different, but related, things about history in chapters 9 and 23 it is important to note the different contexts of these two chapters. The first five chapters of the *Po* discuss poetry in general and mimesis as it concerns different genres of poetry, particularly epic and tragedy. Chapters 6 to 22 deal with tragedy, the most perfect genre of poetry according to Aristotle. Epic, from which tragedy, as well as history by some accounts<sup>14</sup>, developed, is then discussed and it is

<sup>9</sup> Rhetoric is not a real science for Aristotle and, in other contexts, he does claim that it belongs under political science, e.g. *EN* I, 2, 1094b3. See e.g. Most (1994) 168-9.

<sup>10</sup> Possibly by Aristotle himself.

<sup>11</sup> Zoepffel (1975) 27-8.

<sup>12</sup> Cf. a disputed fragment of Democritus DK68B299 (Clem *Strom* I, 15, 69): ἐγὼ δὲ τῶν κατ' ἑμαυτὸν ἀνθρώπων γῆν πλείστην ἐπεπλανησάμην ἱστορέων τὰ μήκιστα καὶ ἀέρας τε καὶ γέας πλείστας εἶδον καὶ λογίων ἀνδρῶν πλείστων ἐπήκουσα καὶ γραμμένων συνθέσιος μετὰ ἀποδείξεως οὐδεὶς κώ με παρήλλαξεν οὐδ' οἱ Αἰγυπτίων καλεόμενοι Ἀρπεδονάπται· σὺν τοῖς δ' ἐπὶ πᾶσιν ἐπ' ἔτεα ὀγδώκοντα ἐπὶ ξείνης ἐγενήθη. On the encyclopaedic nature of Democritus' work, see e.g. Salem (1996) 10-14, who accepts the authenticity of this fragment.

<sup>13</sup> For now I will concentrate on the *Poetics*.

<sup>14</sup> See my chapter I.

within these two discussions that ἱστορία is brought in for comparison.<sup>15</sup> Before turning to chapter 9 it is important to be clear about the elements that characterise poetry, and tragedy in particular, on Aristotle's theory, as this is what the comparison is based on. Metre has nothing to do with it. Medicine in verse would still be medicine and not poetry. Empedocles has nothing in common with Homer except metre, the one is a poet the other a φυσιολόγος (1447b17-20). More to the point, Herodotus would still be a historian if he had written on verse (1451b2-4). What makes poetry poetry, is the plot (μῦθος), or how its elements are put together (λέγω γὰρ μῦθον τοῦτον τὴν σύνθεσιν τῶν πραγμάτων) (1450a4-5). The mark of a good plot is that it is one whole: it has a beginning, a middle and an end: a beginning is what does not necessarily follow from something else, but naturally leads to something; an end is what naturally occurs, either necessarily or usually (ἢ ἐξ ἀνάγκης ἢ ἐξ ὥς ἐπὶ τὸ πολὺ); what is in the middle both follows from and leads to something else. It is a unity (1450b25-31). What makes tragedy more developed than epic is the fact that a tragedy only has one plot, while epic has many (1462b3-11). In the course of discussing the plot in tragedy Aristotle claims, in chapter 8, that it is not sufficient for the unity of a plot to make it concern *one* individual (πολλὰ γὰρ καὶ ἄπειρα τῷ ἐνὶ συμβαίνει, ἐξ ὧν ἐνίων οὐδέν ἐστιν ἓν) (8, 1451a17-18). Not everything that befalls an individual is relevant, let alone important, for a plot.<sup>16</sup> This is a particularly important point to make in the context of tragedy, as it typically revolves around the fate of one individual.

<sup>15</sup> See Walbank (1960) 231-2 on why Aristotle may have found a need to force the distinction between tragedy and history, while comedy is not a problem. History and tragedy both have their origin in epic poetry and share to a significant degree their subject matter. See also my chapter I.

<sup>16</sup> See in particular Heath (1989) 42-3.



In chapter 9 Aristotle turns to discussing the relation of poetry to actual events,<sup>17</sup> and in this context compares it to history (1451a36-b11):

φανερὸν δὲ ἐκ τῶν εἰρημένων καὶ ὅτι οὐ τὸ τὰ γενόμενα λέγειν, τοῦτο ποιητοῦ ἔργον ἐστίν, ἀλλ' οἷα ἂν γένοιτο καὶ τὰ δυνατὰ κατὰ τὸ εἰκὸς ἢ τὸ ἀναγκαῖον. ὁ γὰρ ἱστορικὸς καὶ ὁ ποιητὴς οὐ τῷ ἢ ἔμμετρα λέγειν ἢ ἄμετρα διαφέρουσιν ( εἴη γὰρ ἂν τὰ Ἡροδότου εἰς μέτρα τεθῆναι καὶ οὐδὲν ἦττον ἂν εἴη ἱστορία τις μετὰ μέτρου ἢ ἄνευ μέτρων). ἀλλὰ τούτῳ διαφέρει, τῷ τὸν μὲν τὰ γενόμενα λέγειν, τὸν δὲ οἷα ἂν γένοιτο. διὸ καὶ φιλοσοφώτερον καὶ σπουδαιότερον ποίησις ἱστορίας ἐστίν· ἡ μὲν γὰρ ποίησις μᾶλλον τὰ καθόλου, ἡ δ' ἱστορία τὰ καθ' ἕκαστον λέγει. ἔστιν δὲ καθόλου μὲν, τῷ ποίῳ τὰ ποῖα ἅττα συμβαίνει λέγειν ἢ πράττειν κατὰ τὸ εἰκὸς ἢ τὸ ἀναγκαῖον, οὗ στοχάζεται ἡ ποίησις ὀνόματα ἐπιτιθεμένη· τὸ δὲ καθ' ἕκαστον, τί Ἀλκιβιάδης ἔπραξεν ἢ τί ἔπαθεν.

The first thing to note here is that Aristotle is not claiming that poetry is in some sense more true than history. It is more general, and as such it is more philosophical. That it is more philosophical is incidental on it being more universal.<sup>18</sup> The example of Alcibiades is used to illustrate the particularity of history. Looking back to what Aristotle says about the individual in chapter 8, the claim is that history records everything that an individual does and suffers, and this does not make a plot. It does not mean, of course, that the doings and sufferings of a historical individual *can not* be the subject of a plot.<sup>19</sup> It means that the recording of an individual's life story does not automatically make it a plot, understood as something that has a beginning, a middle and an end as defined by Aristotle. A historical account can thus be true, in the sense of

<sup>17</sup> Halliwell (1989) 153: "the understanding of poetry is aligned with the axis which runs between the work of art and the world, not that between the artist and his work."

<sup>18</sup> It is φιλοσοφώτερον because (γάρ) it is more universal. See Heath (1991).

<sup>19</sup> Heath (1989) 43 n 9.



saying of what is that it is — which is what it should do.<sup>20</sup> The second point is that the general is obviously more valuable than the particular. Whatever the precise emphasis of σπουδαιότερον, there is no doubt that it means that the universal is more valuable or serious than the particular.<sup>21</sup>

In chapter 23 Aristotle turns from tragedy to epic and makes the same general claim about it as of tragedy. It has to have a dramatic plot, with a beginning, a middle and an end (1459a21-29):

καὶ μὴ ὁμοίας ἱστορίαις τὰς συνθέσεις εἶναι, ἐν αἷς ἀνάγκη οὐχὶ μιᾶς πράξεως ποιεῖσθαι δῆλωσιν ἀλλ' ἐνὸς χρόνου, ὅσα ἐν τούτῳ συνέβη περὶ ἓνα ἢ πλείους, ὧν ἕκαστον ὡς ἔτυχεν ἔχει πρὸς ἄλληλα. ὥσπερ γὰρ κατὰ τοὺς αὐτοὺς χρόνους ἢ τ' ἐν Σαλαμῖνι ἐγένετο ναυμαχία καὶ ἢ ἐν Σικελίᾳ Καρχηδονίων μάχη οὐδὲν πρὸς τὸ αὐτὸ συντείνουσιν τέλος, οὕτω καὶ ἐν τοῖς ἐφεξῆς χρόνοις ἐνίοτε γίνεται θάτερον μετὰ θάτερον, ἐξ ὧν ἐν οὐδὲν γίνεται τέλος.

Epic has a much grander scope than tragedy and contains many plots. In this context Aristotle stresses a different aspect of history than in chapter 9. Within a single period many things happen all over the place. But even important things that happen consecutively are not necessarily related, and that one thing follows from another is necessary for a plot. Concentrating on one period no more helps towards a plot than concentrating on one individual.

An important point to note in this context is that this is not an absolute distinction.<sup>22</sup> Poetry *is* not universal any more than history *is*

<sup>20</sup> Contrast Finley (1975) 12: "It [history] tells us merely what Alcibiades did and suffered. It establishes no truths. It has no serious function." Truth is, of course, according to Aristotle a more elevated concept than fact, and Finley is right in that λέγειν τὰ γενόμενα does not express truth in the more elevated sense. *Met* II, 993b19-24: ὁρθῶς δ' ἔχει καὶ τὸ καλεῖσθαι τὴν φιλοσοφίαν ἐπιστήμην τῆς ἀληθείας ... οὐκ ἴσμεν δὲ τὸ ἀληθὲς ἄνευ τῆς αἰτίας. Cf. also *Top* 105b30-31; *APo* 93a4; 94a20; *Ph* 184a1-3.

<sup>21</sup> Armstrong (1998) 448-9.

<sup>22</sup> The μάλλον in 1451b7 goes both ways, as stressed by von Fritz (1958).

particular. Poetry is *more* philosophical than history because it is more universal. History is thus *less* universal and *more* particular. The distinction is normative and focused on poetry, with history brought in as a negative example. It is therefore brought in as the more familiar part in a comparison, which in itself indicates how established ἱστορία as history was at the time (cf. also Isocrates above). But there are still substantial issues with ἱστορία left. Even though it can be more or less particular it is still essentially about the particular: it is a recording of everything that an individual does and suffers or everything that happens within a particular period of time. Every selection that points to more general aspects is moving away from the historical towards the philosophical, in Aristotle's sense. It is, therefore, doubtful to read this as a critical comment on the actual writings of people like Herodotus<sup>23</sup> and Thucydides. The argument for unity and generality in poetry is not put forth as a theory of the nature and aim of all literary compositions. The standards for writing history are not the same as the standards for writing poetry.<sup>24</sup> For political deliberation it was, for instance, important to stick to the proper nature of ἱστορία. In order to deliberate with ἱστορία the ἱστορία has to be true (or at least conceived to be true).

Aristotle himself has no problem with doing ἱστορία. He bases his own zoological studies on ἱστορία, where its function is to express the particular. But there he takes a second step, which is arguably more important, by using this information to causally explain the facts gathered in the ἱστορίαι.<sup>25</sup> The question is whether this second step is possible, or desirable, in history at all. It

<sup>23</sup> Compare this remark from a recent book on Herodotus: "[Reading Herodotus] is to enter a past world in which events have meaning not *merely because they occurred*, but because they have been assembled, and in some cases transformed, by a writer of enormous wit, imagination, and moral intelligence." Romm (1998) 4 (my emphasis).

<sup>24</sup> Cf. Heath (1989) 38 and (1991).

is difficult to say what Aristotle may have thought about that<sup>26</sup>, but many historians after Aristotle argued for history being in significant respects philosophical.<sup>27</sup>

Before I take leave of Aristotle (until next chapter) there is one thing about the particular in history worth emphasising. Alcibiades is the example Aristotle uses. He is a single individual of the species. A historian who wants to emphasise the philosophical (in Aristotle's sense) nature of history has to emphasise the human, as in the species, element in history. As Thucydides did. In the *Historia Animalium* Aristotle also stresses the particular, but in this case it is not the individual, except as a perfect exemplar of the species. He may base his descriptions of the Egyptian crocodile on Herodotus, who may (or may not) have seen a single crocodile. But as a description of a particular crocodile it is a description of it as a member of the species. Aristotle may (or may not) have had only one run at the egg experiment (see chapter III), but the description of the development of the chick functions, and *theoretically is*, a description of the development of all chicks (except abnormal ones). In this respect there is an important difference

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<sup>25</sup> See in particular *APr* I. 30. 46a17-27; *HA* 491a7-14; *PA* II. 646a8-12. I discuss this in chapters III and IV.

<sup>26</sup> *APo* II, 11, 94a36-94b8 (cf. Herodotus V, 97-102) suggests that Aristotle thought it might be possible to express historical causation in syllogistic form. This chapter of the *APo* has caused commentators great trouble as it contains examples of demonstrations that do not work in a syllogism. Ross (1949) 639 finds it utterly unsatisfactory and thinks it has not been worked out properly. On p. 647 describes them as "quasi-syllogisms", though Barnes in his commentary ad loc. finds the structure of the chapter "remarkably clear", and thinks Aristotle has just landed himself with a bad example. A curiosity: Barnes (1993) ad loc. 94a36 refers his readers to Herodotus V, 97-102 "for the facts". Carl Hempel (1962) is, of course, well known for arguing that the same kind of causal explanations should apply in history as in natural science.

<sup>27</sup> See Walbank's classic review (1960) of how far Aristotle may have influenced later historical writings, criticising von Fritz (1958). The development of more philosophical or tragic history is not in question, but whether Aristotle was an important influence in this development is.

between what Aristotle is here describing as ἱστορία and what he himself practices in the zoological writings.<sup>28</sup>

## 2. Herodotus on his and others' ἱστορεῖν.

Aristotle and Herodotus agree that epic poetry is not concerned with relating what actually happened (cf. Herodotus II, 116). In so far as Herodotus understood his own work as ἱστορίη, he uses a similar dichotomy as Aristotle: he is trying to establish and present what actually happened while epic poetry has other objectives. I will now turn to the "historian" Aristotle refers to in the *Poetics* as ἱστορικός: Herodotus. I am less concerned with an overall interpretation of his *Histories* as with analysing his use of ἱστορίη and ἱστορεῖν. His use of these terms for his own activity is largely confined to book II. The second book of the *Histories* is divided at 99, 1 with the following statement:<sup>29</sup>

<sup>28</sup> See e.g. Charles (2000) 279 n 11 on *Met* VII, 10, 1035b27-31 on whether perceptible substances can be defined: a "man" and "horse" as applied to individuals must be understood as a composite of form and matter as universal (ὡς καθόλου). Is it the matter or the composite whole that are to be understood as universal?

<sup>29</sup> On the relation of seeing and hearing, discussing this passage among other, see Hartog (1991) 271-282. Hartog (282) stresses that ἀκοή is a source of knowledge for Herodotus just as ὄψις is, contrasting this with Thucydides. Luraghi (2001) is good on ἀκοή but he muddles his "discourses" by first calling Herodotus' authorial interventions the "discourse of ἱστορίη" (141) and then (242) subdividing into "three branches of the discourse of ἱστορίη, i.e. γνώμη, ὄψις, and ἀκοή ...". II, 99, 1 is among Herodotus' best known authorial interventions and here ἱστορίη is on par with ὄψις and γνώμη, and it seems to take the place of ἀκοή in Luraghi's scheme. The two can not be identified, though (see my further discussion), but Luraghi is far too schematic in his approach, cf. also on page 152: "... I prefer to confine myself to the objective observation that the discourse of ἱστορίη, and the discourse of ἀκοή as a subentity of it, here [in book II] reach a peak of intensity." Herodotus' authorial interventions in book II do

μέχρι μὲν τούτου ὅψις τε ἐμὴ καὶ γνώμη καὶ ἱστορίη ταῦτα λέγουσά  
 ἐστὶ, τὸ δὲ ἀπὸ τοῦδε Αἰγυπτίους ἔρχομαι λόγους ἐρέων κατὰ τὰ  
 ἥκουον· προσέσται δέ τι αὐτοῖσι καὶ τῆς ἐμῆς ὅψιος.

Herodotus concentrates on the geography and customs of Egypt in the chapters leading up to 99, but for the rest of the book he mostly treats its past history.<sup>30</sup> With this paragraph Herodotus makes a sharp distinction between these two parts and, relating to it, between the status and value of them. The distinction is in terms of method. He himself is responsible for the information in the first part of book two, while he reports the past history of Egypt on the authority of the Egyptians, though he corroborates some of it with his own observations.<sup>31</sup> But the following account is by no means a passive λέγειν τὰ λεγόμενα. As indicated Herodotus does corroborate some tales and in other cases he actively engages in ἱστορεῖν, notably on the fate of Helen (to which I will return). So even though he is less actively engaged in the account following chapter 99 the three pillars of his methodology, ὅψις, γνώμη and ἱστορίη are fully working. Below I will argue for a close connection between asking people and receiving information from their answers. Accordingly ἱστορίη is closely related to ἀκοή.

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not *objectively* warrant such a clear distinction between discourses and particularly not a clear distinction between the discourse of ἱστορίη and the subset, the discourse of ἀκοή.

<sup>30</sup> There is another divide, a methodological marker, in II, 147, 1: ταῦτα μὲν νυν αὐτοὶ Αἰγύπτιοι λέγουσι, ὅσα δὲ οἱ τε ἄλλοι ἄνθρωποι καὶ Αἰγύπτιοι λέγουσι ὁμολογέοντες τοῖσι ἄλλοις κατὰ ταύτην τὴν χώραν γενέσθαι, ταῦτ' ἤδη φράσω· προσέσται δέ τι αὐτοῖσι καὶ τῆς ἐμῆς ὅψιος. For the more recent history of Egypt Herodotus has other sources than the Egyptians themselves. This more recent history is from the start of the Saite dynasty, about the middle of the seventh century. Ionians and Carians (II, 154) assisted Psammetichus in attaining the throne in Egypt. From this time on foreigners lived in Egypt and "we know the later history accurately" (τὰ ὕστερον ἐπιστάμεθα ἀτρεκέως) (II, 154, 4). See e.g. Luce (1997) 22-23 about the threefold division of book II.

<sup>31</sup> See Calame (1998) for the importance of these authorial interventions for linking the Egyptian and the Greek chronology.

But II, 99, 1 also indicates that there are different degrees of this, as the information he receives from the Egyptians does not qualify as *ιστορίη*.<sup>32</sup>

Herodotus' uses of *ιστορίη* and *ιστορεῖν* can be roughly divided into his own engagement with *ιστορίη/εἶν* and his ascriptions of *ιστορίη/εἶν* to some of his protagonists. In addition there are general or methodological statements, as in the proem, II, 99, 1 and VII, 96, 1. Starting with Herodotus' ascriptions, there is first I, 24, 7 about the Corinthian sailors, who had robbed Arion and made him jump into the sea. They are summoned before Periander and asked if they have anything to say about Arion (*ιστορέεσθαι εἴ τι λέγοιεν περὶ Ἀρίονος*). In I, 61 we hear about Pisistratus, who does not want to have children with his wife. He, therefore, has inappropriate intercourse with her (*οὐ κατὰ νόμον*). The wife, Megacles' daughter, eventually told her mother, "perhaps under questioning perhaps not" (*εἴτε ιστορεύσῃ εἴτε καὶ οὐ*). In I, 122, 1 Cyrus, who, as a child, has been living with a herdsman and his wife for ten years, returns to his parents, Cambysis and Mandane, who ask him by what means he has survived (*ιστόρεόν τε, ὅτεω τρόπῳ περιγένοιτο*). In III, 50–51 Herodotus writes about Periander and his two sons. Periander has killed his wife, Melissa, and her father has given his two grandsons by Melissa a clue as to Periander's guilt. The younger boy is so distraught that he refuses to speak to his father and does not answer any questions (*ιστορέοντί τε λόγον οὐδένα ἐδίδου* 50, 3). Periander drove him out and asked his elder son (*ιστόρεε τὸν πρεσβύτερον* 51, 1) about what

<sup>32</sup> Thomas (2000) 165, discussing II, 99, 1: "Rather, he is distinguishing precisely his own enquiries and sources of knowledge in exactly the language that was favoured by the early Hippocratic writers and no doubt other contemporaries — the distinction between what you can deduce from *gnome*, and what you can tell by experience, and via concepts used by the natural philosophers (...)." She does not seem to give *ιστορίη* much space, as she works with a dichotomy between observation and speculation, and Thomas has a tendency to see *ιστορίη* in terms of observation, as when she refers to *ιστόριον* in *NatPuer* 13 as "evidence, which is



his grandfather had said. He claims not to remember, but Periander keeps questioning him (ἱστορέων 51, 1) until the boy gives in and tells his father. In III, 77 Darius and his six companions have entered the palace to overthrow the illegitimate power of the Magi. They managed to get through the gate without suspicion, but inside the eunuchs, the king's messengers, asked them (σφεας ἱστόρεον) what they had come for, and while asking (ἄμα ἱστορέοντες) they threatened the sentries at the gate for letting them in (77, 2). Finally in VII, 195 a Persian ship is captured and the Greeks ask the captives (οἱ Ἕλληνες ἐξιστορήσαντες) about Xerxes' army. These are all plain instances of asking or enquiring by words, and being answered by words, i.e. of finding out about what you want by asking someone else. Ἱστορεῖν in tragedy is used in the same meaning (cf. my chapter I).

Before leaving this part of Herodotus' use of ἱστορεῖν and ἱστορίη I will look more closely at I, 56, 1–2, where Croesus the Lydian is reported to have done some ἱστορίη. Croesus has just received what he believes to be good news from the oracle in Delphi, i.e. that the Lydians shall remain in power until a mule (ἡμίονος) becomes king of the Medes.<sup>33</sup>

τούτοισι ἐλθοῦσι τοῖσι ἔπεσι ὁ Κροῖσος πολλόν τι μάλιστα πάντων ἦσθη, ἐλπίζων ἡμίονον οὐδαμὰ ἀντ' ἀνδρὸς βασιλεύσειν Μήδων, οὐδ' ὦν αὐτὸς οὐδ' οἱ ἐξ αὐτοῦ παύσεσθαι κοτε τῆς ἀρχῆς. μετὰ δὲ ταῦτα ἐφρόντιζε ἱστορέων τοὺς ἄν Ἑλλήνων δυνατωτάτους ἐόντας προσκτῆσθαι φίλους. ἱστορέων δὲ εὔρισκε Λακεδαιμονίους τε καὶ Ἀθηναίους προέχοντας, τοὺς μὲν τοῦ Δωρικοῦ γένεος, τοὺς δὲ τοῦ Ἰωνικοῦ.

seen" (165). But see also 166, where she argues that there is no "necessary relationship between *historie* and a resort to visual evidence."

<sup>33</sup> Cyrus was half Median, half Persian, and in that sense a ἡμίονος.



These are the only cases where ἱστορεῖν does not obviously mean "ask" and on a first reading one might want to translate "enquire", as indeed most translators do. But it is equally clear that asking is what Herodotus must have in mind here. We are hardly to think that Croesus made any other kind of enquiries. And the continuation of this story confirms that asking is indeed what Herodotus must *mean* in this passage. Herodotus relates the histories of Athens and Sparta as Croesus was supposed to have been told them (πυνθάνομαι in 59, 1; 65, 1; 69, 1). By his enquiry, i.e. asking, he found out that the Athenians and Spartans were the most powerful. But he apparently found out a lot more about Athens and Sparta, which allowed him in the end to choose between them.

If we look at Herodotus' uses of ἱστορεῖν and ἱστορίη of his own enquiries a peculiar feature is immediately apparent. Of the eight instances where he uses these words, excepting the three methodological or generic passages, all but one are from book II.<sup>34</sup> There is in addition IV, 192, 3, which I discuss below. Five of these are in the realm of geography (including IV, 192, 3) while the rest concern ancient Greek stories about Heracles and Helen. All these uses are similar to the ones he ascribes to his protagonists, in that they involve Herodotus asking someone about what he himself does not know. I will deal with these areas of enquiry individually, starting with the Nile. My thesis is that these, as well as some other enquiries in book two, add up to a radical attack on Greek "history" as told by the great story tellers before Herodotus'— in particular Homer and Hesiod.

<sup>34</sup> II, 19, 3 (twice); 29, 1; 34, 1; 44, 5; 113, 1. There are in addition 118, 1 and 119, 3 where Herodotus discusses the Egyptian's ἱστορίαι. I discuss these below.

### 3. The monumental Nile.

To the Greeks Egypt was a remarkable country. Everyone of any importance in Greek intellectual history (Solon, Thales, Pythagoras, etc.) travelled to Egypt, or so the story goes. The Egyptians were regarded as the oldest, or at least among the oldest, people in the world (cf. Plato's *Timaeus*). They had many remarkable things and monuments — ἔργα — not least the river Nile.<sup>35</sup> One characteristic of the Nile that particularly caught the imagination was the fact that the Nile flooded in summer and not in winter, as *all other rivers*. This is the problem Herodotus poses in II, 19. He asked (ἱστορέων) the Egyptians about this but they could not inform him. He also asked (ἱστόρεον) why there was no breeze from the Nile, again in opposition to all other rivers. No one in Egypt could explain this to him. His ἱστορεῖν came to nothing. He has, therefore, to rely on γνώμη, his intelligence. He was not the first to do that. Some Greeks, "hoping to advertise how clever they are", had tried to explain this phenomenon (II, 20, 1). Herodotus dismisses three proposed explanations in chapters 20–22<sup>36</sup> and tentatively produces his own in chapter 24<sup>37</sup>. According to his explanation the Nile does not overflow in the summer but dries up in the winter, i.e. when there is winter in Greece. This drying up is caused by the sun, which in winter is over Egypt. There is, therefore, nothing remarkable about the Nile flooding in the summer, i.e. in the Greek summer.

One of the explanations he dismisses is particularly telling. According to one theory the Nile shows its remarkable character somehow

<sup>35</sup> Cf. Diodorus Siculus I, 37, 9 on "Nile" aptly meaning in Egyptian "water from darkness".

<sup>36</sup> II, 20, 2 the Etesian winds; II, 21 Ocean (discussed below); II, 22, 1–4 melting snow. See Thomas (2000) 184–189, comparing II, 22 to *NatPuer/Morb* IV.

<sup>37</sup> εἰ δὲ δεῖ μεμψάμενον γνώμας τὰς προκειμένας αὐτὸν περὶ τῶν ἀφανέων γνώμην ἀποδέξασθαι, φράσω δι' ὃ τι μοι δοκέει πληθῆσθαι ὁ Νεῖλος τοῦ θέρεος. κτλ. Cf. also II, 33, 2 on arguing by analogy from the visible to the invisible. See also my ch. III.

because it flows from the Ocean (II, 21).<sup>38</sup> But he has nothing but scorn over for this theory (II, 23):

ὁ δὲ περὶ τοῦ Ὠκεανοῦ λέξας ἐς ἀφανὲς τὸν μῦθον ἀνενείκας οὐκ ἔχει ἔλεγκον<sup>39</sup>. οὐ γάρ τινα ἔγωγε οἶδα ποταμὸν Ὠκεανὸν ἐόντα, Ὅμερου δὲ ἢ τινα τῶν πρότερον γενομένων ποιητέων δοκέω τοῦνομα εὐρόντα ἐς ποίησιν ἐσενείκασθαι.

Ocean is indeed mentioned by Homer and Hesiod<sup>40</sup>, but they may not be Herodotus' primary objects of scorn (IV, 36, 2):

γελῶ δὲ ὁρῶν γῆς περιόδους γράψαντας πολλοὺς ἤδη καὶ οὐδένα νόον ἐχόντως ἐξηγησάμενον. οἱ Ὠκεανὸν τε ῥέοντα γράφουσι πέριξ τὴν γῆν, ἐοῦσαν κυκλοτερέα ὡς ἀπὸ τόρνου, καὶ τὴν Ἀσίην τῇ Εὐρώπῃ ποιούντων ἴσιν.

One of these map makers was Hecataeus (Anaximander a possible other), and he stated that the Nile was connected with Ocean (FGrH I F 302), and he is probably Herodotus' primary target, though the criticism is formulated in more general terms. In II, 23 it is the lack of evidence for the existence of a river called Ocean encircling the world that he criticises (cf. IV, 8, 2) while in IV, 36 (and 42) it is the neat rationalism of the maps he objects to. On these maps the continents are of equal sizes (cf. also IV, 42) etc., and Herodotus refuses to admit a priori a symmetrical view of the world and thus "makes room for a new kind of distant-world geography, based not on geometry but on what can be

<sup>38</sup> Romm (1992) 33, and (1998) 89-91 on Herodotus' rejection of Ocean as the cornerstone of his critique of archaic geography.

<sup>39</sup> This is one of the earliest uses of ἔλεγκος, and this is the same kind of argument Thucydides uses in I, 21, 1 against the stories of the logographers (ἀνεξέλεγκτα). See Thomas (2000) 168, defending Herodotus against Thucydidean criticisms.

<sup>40</sup> *IL* XVIII, 607ff., XXI, 194 ff. and Hesiod's *Th* 338, where the Nile is said to originate in Ocean.

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<sup>38</sup> Romm (1992) 33, and (1998) 89-91 on Herodotus' rejection of Ocean as the cornerstone of his critique of archaic geography.

<sup>39</sup> This is one of the earliest uses of ἔλεγκος, and this is the same kind of argument Thucydides uses in I, 21, 1 against the stories of the logographers (ἀνεξέλεγκτα). See Thomas (2000) 168, defending Herodotus against Thucydidean criticisms.

<sup>40</sup> *IL* XVIII, 607ff., XXI, 194 ff. and Hesiod's *Th* 338, where the Nile is said to originate in Ocean.

learned from reliable informants."<sup>41</sup> These include Scylax (IV, 44) and those who circumnavigated Africa (IV 42-3, though Herodotus does not believe everything they say).

A good, but problematic, example for how Herodotus operates in geography is his attempt to discover the source of the Nile. He travelled as far south as Elephantine (II, 29, 1):

ἄλλου δὲ οὐδενὸς οὐδὲν ἐδυνάμην πυθέσθαι, ἀλλὰ τοσόνδε μὲν ἄλλο ἐπὶ  
μακρότατον ἐπυθόμην, μέχρι μὲν Ἐλεφαντίνης πόλιος αὐτόπτης ἐλθών,  
τὸ δ' ἀπὸ τούτου ἀκοῇ ἤδη ἱστορέων.

He starts with αὐτοψία, and where it fails he proceeds by ἱστορίη. Under that latter rubric he relates what he has been told about the people who live south of Elephantine, their history, and in particular the geography of the region. The Nile, according to these reports, runs a certain distance south and then it turns west. How far no one knows. He only describes what he has been told. He rounds this account off in II, 34, 1 with: περὶ τοῦ ῥεύματος αὐτοῦ, ἐπ' ὅσον μακρότατον ἱστορεῦντα ἦν ἐξικέσθαι, εἴρηται. By ἱστορίη he is able to reach closer to the source of the Nile than he is by αὐτοψία, but he has still not reached all the way. No one knows about its source, as it runs through uninhabited parts of Libya. But he is willing to venture a guess. As far as he can tell, the course of the Nile is a mirror image of the course of the Ister (Danube).<sup>42</sup> He, therefore, jumps into the unknown and guesses that the source of the Nile is as far to the west as the source of the Ister.<sup>43</sup>

<sup>41</sup> Romm (1992) 35, and further: "In contrast to the *periodos gês*, a purely theoretical "journey around the earth", Herodotus attempts wherever possible to follow the tracks of known travellers and to avoid what he calls *aphanes* or "unseen" territory (2, 21)."

<sup>42</sup> See II, 50 on the Ister, a river second only to the Nile in volume and other remarkable features. The course of the Ister was "known", though it must be admitted that Herodotus knowledge of the west was not reliable (cf. e.g. Luce (1997) 29-30). In dealing with both the

Herodotus is very hesitant about his "theory" about the source of the Nile and we should give him the benefit of the doubt before attacking him for relying on a symmetrical geography.<sup>44</sup> And we might even want to read this as a very subtle argument. It need not depend on a theory, consciously worked out or not, which says that the south is a mirror image of the north, with an axis running through the Mediterranean sea. It could just as well depend on not assuming *anything* about the overall geography of the world, neither that it is symmetrical nor that it is not (we assume the latter, on good evidence). Not assuming anything of the sort makes it a valuable guess, given the similarity of the Nile and the Ister as far as Herodotus can tell by αὐτοψία and ἱστορίη, that the Nile has its source also parallel to the source of the Ister. But this might be too subtle even for Herodotus, and in any case not relevant in the present context. What this discussion shows is how clear and methodological Herodotus can be in his arguments or accounts. In this example he makes a sharp distinction between αὐτοψία, ἱστορίη and γνώμη and the value of the information based on each.<sup>45</sup> ἱστορίη is what he learns from other people by asking them. It is what he is told and learns by the ear.

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Nile and the Ister Herodotus seeks "conformity to what are effectively universal laws of nature ...", Thomas (2000) 139. The Ister would behave the same as the Nile if the winds and the heavens reversed, cf. II, 24-7.

<sup>43</sup> II, 33, 2: καὶ ὡς ἐγὼ συμβάλλομαι τοῖσι ἐμφανέσι τὰ μὴ γνωσκόμενα τεκμαιρόμενος, τῷ Ἰστρῷ ἐκ τῶν ἴσων μέτρων ὁρμᾶται.

<sup>44</sup> That he does have a rather schematic conception of the structure of the earth, both in geographical and cultural terms, is beyond doubt. The extensive discussion of the Nile is followed in II, 35 with Herodotus' general observations on what makes Egypt remarkable, his main point being that Egyptian customs are the reverse of the ordinary customs of mankind. I do not believe the statements in II, 35 are placed after the arguments about the Nile by coincidence. Romm (1998) 92-3, on Herodotus' criticisms of early geography and II, 35: "... while spurning Ionian symmetrical thinking on some points, he adopts that thinking at others without the least hint of dissatisfaction." See also Thomas (2000) 200, and Lloyd (1979) 29-32 (mostly concerning Herodotus' conception of diseases and divine causation, but stressing the traditional elements in Herodotus).

<sup>45</sup> Müller (1981) argues, based on this threefold division, that Herodotus was the first empiricist — or the "father of empiricism" —, comparing him to Hume.

The hesitant nature of Herodotus' positive theories about the obscure — invisible — aspects of the Nile are telling. It is legitimate to venture a qualified guess about the invisible, but the invisible can not be used to explain the behaviour of the Nile. It is, therefore, not legitimate to refer to Ocean in order to explain the peculiar flooding to the Nile. The important point for him to get through is how ignorant the Greeks are about Egyptian geography, a point he is also at pains to demonstrate when it comes to the knowledge of the past history of Egypt.<sup>46</sup>

#### 4. *Heracles and Helen.*

It is easy to see how Herodotus' three principal methods of discovery were applicable to geography and contemporary customs, but what about the past and the gods? In II, 3 Herodotus claims that he will not say any more about what he has heard about τὰ θεῖα than he has to. More precisely, he says that he will only mention the names of the gods (more on this below). He more or less follows this rule. The greatest exception is the inquiry into Heracles, and notably this discussion is followed by Herodotus' most pious remark (II, 45, 3<sup>47</sup>). In chapters 43-45 Herodotus criticises the Greek stories about Heracles. According to them he was the son of Alcmena and either Zeus or Amphytrion, her mortal partner. They both had intercourse with her the same night, Zeus first disguised as Amphytrion. As a result of this she bore the twins Heracles

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<sup>46</sup> Cf. Lateiner (1989) 97: "Herodotus uses Egyptian geography to demonstrate general Greek ignorance and inadequate *historie*." See Vanicelli (2001) for the centrality of chronological concerns in the account of Egypt, which also includes the discussion of the Nile: the behaviour of the Nile is related to Egyptian chronology as Egypt is the gift of the Nile.



and Iphicles. Iphicles was Amphitryon's son, and therefore not a hero, and Heracles was either thought to be the son of Amphitryon or Zeus.<sup>48</sup> Herodotus consequently describes him as the son of Amphitryon and stresses thus his humanity. Heracles was usually accepted as a hero and he was worshipped as such. But he was also worshipped as a god, as he, after his death, was elevated to a god. There were thus two cults of Heracles in Greece, one for the hero and one for the god, but the god and the hero were thought to be the same individual.

Herodotus argues, on the one hand, that the god Heracles was originally from Egypt<sup>49</sup> and, on the other, that the god and the Greek hero were not one and the same. The Egyptians told him that Heracles was one of their twelve gods, which, according to the Egyptian chronology, means that he was 17.000 years old. Herodotus heard nothing about the other Heracles, the hero, in Egypt. He claims there is a number of τεκμήρια (43, 2) to show that the Greeks got the name of Heracles from Egypt, and gave it to the son of Alcmene and Amphitryon, and not the Egyptians who got the name from Greece. He mentions two: **a.** his parents, Alcmene and Amphitryon, were both Egyptian; **b.** the Egyptians do not know the names of Poseidon or the Dioscouri, and they should have known them before any other (this is based on Herodotus' assumptions about sea-faring Greeks and Egyptians). The age of the heroes in Greece was approximately 800 years before Herodotus. The Greek hero was therefore approximately 16.000 years younger than the Egyptian god.

To get a clear knowledge about what the Egyptians said<sup>50</sup> Herodotus travelled to Tyre in Phoenicia, as he heard there was a temple there

<sup>47</sup> καὶ περὶ μὲν τούτων τοσαῦτα ἡμῖν εἰποῦσι καὶ παρὰ τῶν θεῶν καὶ παρὰ τῶν ἡρώων εὐμένεια εἶη .

<sup>48</sup> He is either called the son of Zeus (*Il* XIX, 98 ff.) or Amphitryon (*Il* V, 392).

<sup>49</sup> He says that the name - οὐνομα - of Heracles stems from Egypt. I discuss this below.

<sup>50</sup> *Il*, 44, 1: καὶ θέλων δὲ τούτων περὶ σαφές τι εἰδέναι, κτλ.

dedicated to Heracles. This temple, the priests told him, was as old as Tyre itself, which had stood for 2.300 years. Herodotus also says he visited another Heracles temple in Thasos, which was built five generations before the Greek Heracles, the son of Amphytryon, was born. τὰ μὲν νυν ἱστορημένα δηλοῖ σαφέως παλαιὸν θεὸν Ἡρακλέα ἔόντα (II, 44, 5). These ἱστορημένα are his travels to the temples in Tyre and Thasos and are based on his discussions with the priests there. He relies on visual evidence in the temples for corroboration. His argument is based on the identification of an Egyptian god (Shu or Chonsu<sup>51</sup>) and the Greek god Heracles, and on the relative time of the heroes in Greece and the twelve gods in Egypt. Because of chronological discrepancies these two can not be one and the same.

In chapter 45 Herodotus relates a story (μῦθος) the Greeks tell about Heracles. According to it Heracles once came to Egypt and was captured by the Egyptians to be sacrificed to Zeus. He freed himself and killed them all. This Herodotus takes to show how ignorant the Greeks were about Egypt, as the Egyptians were forbidden by their religion to kill animals. It is, therefore, not likely that they would sacrifice a human being. This he takes to show how ignorant the Greeks who say this were about the nature of the Egyptians and their customs (II, 45, 2). Then he says: "Besides, if Heracles was a mere man (as they say he was) (ἔτι ἄνθρωπον, ὥς δὴ φασι ) and single-handed, how is it conceivable that he should have killed tens of thousands of people?" The argument is that *those who say* that Heracles was only (or still) a man, i.e. the son of Amphytryon, also say that he killed tens of thousands of people in Egypt single-handed. They are, therefore, both ignorant about the Egyptians and more generally illogical. Herodotus relates this story as an example of the many and

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<sup>51</sup> A.B. Lloyd (1976) 201-202.

silly stories the Greeks can tell.<sup>52</sup> They are, therefore, not to be trusted, and particularly not in what they say about Heracles.

In II 113-120 he inquires into the fate of Helen. According to the *Iliad* she was abducted by prince Paris, which, in the end, caused the Trojan war. This is one of the reasons listed at the beginning of book one for why the Greeks and the barbarians became enemies. But in Egypt Herodotus finds out that on his way home Paris caught foul weather and stranded in Egypt. When the Egyptians discovered that he had abducted Helen, they required him to hand her over as well as the treasure he had stolen. This he did and went to Troy without Helen and the treasure. This story comes from Menelaus himself (118, 1):

είρομένου δὲ μευ τοὺς ἱρέας εἰ μάταιον λόγον λέγουσι οἱ Ἕλληνες τὰ  
περὶ Ἴλιον γενέσθαι ἢ οὐ, ἔφασαν πρὸς ταῦτα τάδε, ἱστορίῃσι φάμενοι  
εἰδέναι παρ' αὐτοῦ Μενέλεω· κτλ.

Some of this the Egyptians know more securely, as the events had taken place in their own country (119, 3):

τούτων δὲ τὰ μὲν ἱστορίῃσι ἔφασαν ἐπίστασθαι, τὰ δὲ παρ' ἑωντοῖσι  
γενόμενα ἀτρεκέως ἐπιστάμενοι λέγειν.

Herodotus says that he believes the Egyptian version, rather than Homer's, because the Trojans would never have sacrificed Troy just so that Paris could live with Helen. They would surely have handed Helen over before the city was sacked (120, 1-2). He also says that he believes Homer knew the Egyptian version but rejected it, as it was "less suitable to epic poetry than the one he

<sup>52</sup> II, 45, 1: λέγουσι δὲ πολλὰ καὶ ἄλλα ἀνεπισκέπτως οἱ Ἕλληνες.

actually used" (116, 1).<sup>53</sup> Epic poetry has other interests than telling what really happened. In this argument there is an interesting combination of *ἱστορίη* and *γνώμη*, i.e. Herodotus' *γνώμη* and the Egyptian priests' reported *ἱστορίη*, i.e. the choosing between conflicting versions. He describes the versions he chooses as being based on *ἱστορίη*.

But Herodotus was not the first to criticise the account of Helen in the *Iliad*. Stesichorus had done so earlier in his *Palinodia*. According to Plato (*Phdr* 243a) and Isocrates (*Hel* 64) Stesichorus first told the standard scandalous story of Helen but went blind, just like Homer. But, unlike Homer, Stesichorus knew what went wrong and composed his *Palinodia*, in which he says Helen never went with Paris to Troy. He was cured because he no longer slandered Helen. Herodotus was not unique in attacking the stories of epic poetry. But his way of doing it was different from other possible and actual ways of doing it. There is no indication and no reason to think that Stesichorus had asked around or in any other way enquired into the fate of Helen in order to establish what had happened. His discovery came about through other channels.

These two excursions into the traditional stories of the Greeks are an excellent illustration of Herodotus' practise of *ἱστορίη*. He asked the Egyptians, and not any Egyptians but the Egyptian priests, and compared what they said with what the Greeks said. In some instances he uses their *ἱστορίη*. He evaluated the different traditions according to his own intellect (*γνώμη*) and visible evidence (e.g. temples).

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<sup>53</sup> δοκέει δέ μοι καὶ "Ὅμηρος τὸν λόγον τοῦτον πυθέσθαι· ἀλλ' οὐ γὰρ ὁμοίως ἐς τὴν ἐποποιίην εὐπρεπῆς, ἣν τῷ ἑτέρῳ τῷ περ ἐχρήσατο, [ ἐς δ' ] μετῆκε αὐτόν, δηλώσας ὡς καὶ τοῦτον ἐπίστατο τὸν λόγον. He infers this from verses in Homer, *Il* VI, 289-292 and *Od* IV, 227-30, 351-2. Compare Aristotle on what is suitable for a plot, both in epic and tragedy.

Herodotus is not just after some individual accounts of the past but the whole Greek traditional literature and particularly Homer and Hesiod. Discussing the Nile as well as Heracles and Helen gives Herodotus the ammunition he needs to make this sweeping attack. In II, 50-53 he argues for a theory about how the Greeks came to believe what they do about their distant past and the gods. It happened in three stages. Information about the first two stages Herodotus claims to have got in Dodona, but the theory about the last stage is his own speculation. It is here he attacks Homer and Hesiod:

1. The Pelasgians<sup>54</sup> sacrificed to the gods "without any distinction of name or title"<sup>55</sup>. They called them collectively θεοί.
2. Much later they learnt the names of the gods. Most of the names came from Egypt, Poseidon's from Libya, but Hera, Hestia, Themis, the Graces and the Nereids got their names from the Pelasgians. From this time they used the names when they sacrificed to the gods. The Greeks learnt this from the Pelasgians.<sup>56</sup>
3. The Pelasgians and the Greeks did not know anything about the gods' origins (ἐγένοντο), their form or if they had always existed until, so to say, "the day before yesterday" (II, 53, 1). 'Ἡσίοδον γὰρ καὶ "Ὅμηρον ἡλικίην τετρακοσίοισι ἔτεσι δοκέω μεν πρεσβυτέρους γενέσθαι καὶ οὐ πλέοσι. οὗτοι δὲ εἰσι οἱ ποιήσαντες θεογονίην "Ἕλλησι καὶ τοῖσι θεοῖσι τὰς ἑπωνυμίας δόντες καὶ τιμὰς τε καὶ τέχνας διελόντες καὶ εἶδεα αὐτῶν σημῆναντες (II, 53, 2).

<sup>54</sup> According to Herodotus (I, 59) and the Greek tradition the Pelasgians were the original inhabitants of Greece.

<sup>55</sup> II, 52, 1: ἔθνον δὲ πάντα πρότερον οἱ Πελασγοὶ θεοῖσι ἐπυχόμενοι, ὥς ἐγὼ ἐν Δωδώνῃ οἶδα ἀκύσας, ἑπωνυμίην δὲ οὐδ' οὐνομα ἐποιεῦντο οὐδενὶ αὐτῶν.

This is Herodotus' theory about the birth of the Greek theogony. He reaches this conclusion having enquired into the Greek tradition in Egypt. There are two problems in this interpretation I will briefly address.

The first regards the step from 1 to 2. What does Herodotus mean by οὐνομα? Not the gods, but the names of the gods came from Egypt. Herodotus both knew the Greek names and the Egyptian names (as he both refers to Egyptian and Greek names). Can he possibly mean that the Greek names are derived from the Egyptian names (Dionysus from Osiris, Heracles from Shu or Chonsu, etc.)? This is a thorny issue and not particularly important for my purposes.<sup>57</sup> When he says that the Pelasgians sacrificed to the gods without names, whatever he means by name, he must at least mean that they did not differentiate the gods.<sup>58</sup> It was first after the gods were named that they became both many and different from each other. The gods are individualised with "names" and it is only then that they became *identifiable individuals*. In II, 146 Herodotus suggests that the Greeks traced the genealogy of Heracles, Pan and Dionysus back to the time they learned about these gods, which was fairly

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<sup>56</sup> II, 50. Herodotus might have dogmatically claimed that all the names must ultimately have come from Egypt. It would have been the most simple and economic theory and more in accordance with common practice. But his enquiries do not confirm it.

<sup>57</sup> See now the excellent review of the matter by Harrison (2000a) 251-264, who argues that Herodotus actually means that the Greek names originated in the Egyptian names, arguing from ideas found in Herodotus about how language can change. A.B. Lloyd argues that the Egyptian learned the Greek names from some Greeks that were staying in Egypt and that they used the Greek names when talking to him (A.B. Lloyd (1975) 42-44). How can he explain that Herodotus both expresses knowledge of the Greek and the Egyptian name for some of the gods? These "occasional anomalies" (as Lloyd calls them) can be explained away, according to Lloyd, like this: Herodotus thought the gods had two names in Egypt or that the "Greek" name had become unfashionable in Egypt after it was taken up in Greece (and that the Egyptians had started to use a new name for the god). Linforth (1926) and (1928) set the tone for those who claim that Herodotus does not mean name by οὐνομα, accepted by among others von Fritz (1967) 99 n 106 and Burkert (1985) 121-132.

<sup>58</sup> One only has to imagine the Pelasgians sacrificing to a collection of "gods", on the one hand, and to a collection of individual gods, on the other, to see what an essential difference it makes.

late. In this, as in many other contexts, he does talk about the gods in terms of their names.

The second problem regards the step from 2 to 3 and, as with the "name" problem, it involves a single word. What does Herodotus mean by ποιήσαντες? In this connection it can either mean "to represent in poetry" or "to create". Herodotus is either saying that Homer and Hesiod took something that already existed and represented it, with some modifications, in poetry, i.e. put it in verse, or that they actually created or made up everything they say about the gods. He states that after the Greeks and Pelasgians got to know the names of the gods they still did not know what they looked like or what functions they had. They did not know what their origin was or how long they had existed. They knew nothing about them. It seems obvious, therefore, that he means Homer and Hesiod *made up* the tales about the gods. This idea can also be an expression of a well known category in Greek thought, the "first inventor" (πρῶτος εὐρετής).<sup>59</sup> According to this category every invention or achievement was due to a single individual, who then passed it on. According to Herodotus, Homer and Hesiod were the first to compose a theogony for the Greeks and it is therefore their responsibility.<sup>60</sup> That is why he argues against those who claim that some other poets (e.g. Orpheus and Musaeus) preceded Homer and Hesiod (II, 53). There were alternative theogonies in Greece and the followers of other theogonic literature probably claimed that their author was older than Homer and Hesiod. The question of temporal priority was important as it was at the same time a question of authority. But Herodotus does not mean that Homer and Hesiod were right or had a claim to authority,

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<sup>59</sup> Cf. Kleingünther (1933).

<sup>60</sup> See Rydbeck (1969) 75-81.



quite the contrary. But they were the first to make up a theogony and are therefore to be blamed for the false tradition of the Greeks.<sup>61</sup>

Herodotus was neither the first nor the last to criticise the religious traditions of the Greeks. Xenophanes and Protagoras are some notable early critics. Xenophanes said that no one ever had or would know the truth about the gods and Protagoras that it was impossible to know anything about the gods, even if they existed or not.<sup>62</sup> Herodotus similarly has a general statement in II, 3, 2:

τὰ μὲν νυν θεῖα τῶν ἀπηγημάτων οἷα ἤκουον, οὐκ εἰμὶ πρόθυμος  
ἐξηγέεσθαι, ἔξω ἢ τὰ οὐνόματα αὐτῶν μῶνον, νομίζων πάντας  
ἀνθρώπους ἴσον περὶ αὐτῶν ἐπίστασθαι· τὰ δ' ἂν ἐπιμνησθῆω αὐτῶν,  
ὑπὸ τοῦ λόγου ἐξαναγκαζόμενος ἐπιμνησθήσομαι.

Herodotus, as we have seen, was very interested in the names or identifications of the gods, but when it comes to characterising them it is another matter all together. Instead of relating what different people say about their religions (their theogonies) he concentrates on the rituals involved and describes them in detail.<sup>63</sup> This is in accordance with the epistemological principle quoted above. As he is sceptical about claims to knowledge of the gods he avoids relating what people say about them. But he is not sceptical about the existence of the gods or about their influence on human affairs.<sup>64</sup> Having established that Helen

<sup>61</sup> Aristotle also presents the poet as a maker of plots, and specifically opposes this to meter (τὸν ποιητὴν μᾶλλον τῶν μύθων εἶναι δεῖ ποιητὴν ἢ τῶν μέτρων 1451b27-8). He seems not to have been too concerned with completely made up plots, as the subject matter of most tragedies was based on the accepted past of the Greeks. But it still points in the same direction as Herodotus, i.e. that poets made up the stories they told.

<sup>62</sup> Xenophanes DK21B34 and Protagoras DK 4.

<sup>63</sup> See Burkert (1990) and Gould (1994).

<sup>64</sup> This allows him to make an Interpretatio Graeca. The gods exist as individuals and are identified with different names in different countries. As Herodotus is writing for a Greek audience he translates the names of the gods.

was not in Troy and that the Trojan war was partly based on a misunderstanding, he closes his account with the following words (II, 120, 5):

ἀλλ' οὐ γὰρ εἶχον Ἑλένην ἀποδοῦναι οὐδὲ λέγουσι αὐτοῖσι τὴν  
ἀληθείην ἐπίστευον οἱ Ἕλληνες, ὥς μὲν ἐγὼ γνώμην ἀποφαίνομαι, τοῦ  
δαιμονίου παρασκευάζοντος ὅπως πανωλεθρίῃ ἀπολόμενοι καταφανὲς  
τοῦτο τοῖσι ἀνθρώποισι ποιήσωσι, ὥς τῶν μεγάλων ἀδικημάτων  
μεγάλαι, εἰσὶ καὶ αἱ τιμωρίαι παρὰ τῶν θεῶν. καὶ ταῦτα μὲν τῇ ἐμοὶ  
δοκέει εἶρηται.

The gods are involved in human affairs but not in the way they are in the poems of Homer and Hesiod. There, individual gods with individual wills are directly and personally, and therefore to some degree arbitrarily, involved in human affairs. That is the tradition Herodotus criticises. Xenophanes had criticised epic poetry because it told immoral tales about the gods. Herodotus may have thought the same, but he does not argue in this way. His arguments against Homer and Hesiod are based on *ἱστορίη* and not some general philosophical or moral principles. It is important to note that even if divinity is involved in human affairs there are also human causes involved. Note in the example above that the Greeks sacked Troy because they *believed* Helen was there, and it is this belief which is caused by the gods. We can, therefore, not write the divine elements off as completely redundant in Herodotus' causal explanations. The divine is responsible for the structure of Herodotus' history, that great injustice causes utter destruction, that small states become large and large states become small, etc.

In opposition to his predecessor Hecataeus, Herodotus does not dogmatically rationalise or attack the traditional tales of the Greeks or other people. He investigates and tries to find evidence for or against a story - preferably visual. There are, of course, some presuppositions involved in his

investigations and narrative, the existence of the gods and the age of the heroes being some. But he is very different from some or most of the intellectuals of his day. He does not jump to rationalisations or systematic arguments to explain what he sees or hears. We must remember that divine involvement in human affairs is actually something people experience.

When confronted with another past than his own, Herodotus does not automatically try to incorporate the foreign tradition in to his own native tradition. Neither does he automatically accept the foreign tradition (though he might be suspected of being predisposed to accept the Egyptian tradition, given the general Greek reverence for all things Egyptian). For him the evidence for the Egyptian version of the story of Heracles is overwhelming. And in both cases he also uses arguments from plausibility. There is only one past and the different accounts of it given by Greeks and Egyptians means that one has to be substantially wrong. Herodotus identifies the source for what is wrong in the Greek version. This turns out to be the epic tradition, what he aims to replace with his own account.

Whether Herodotus is researching geography and customs or the remote past and the origin of the gods, as well as the origin of Greek knowledge about the gods, he is consistent in his methodology. His enquiry into Heracles is, in the words of a recent study, "peppered with his most scientific *historical* vocabulary"<sup>65</sup>, though calling it "historical" may be stretching the point. In the rest of this chapter I will explore the use of ἱστορίη in the Hippocratic treatise *On Ancient Medicine* and in the Hellenistic medical sect known as the "Empiricists". My story so far has been roughly chronological and I break out of this chronological order by treating the Empiricists here.

### 5. *Medicine, history and the history of medicine.*

Medicine, like most other disciplines, has a complicated relation to its history. This relation has, of course, changed through the history of medicine. The relevant, i.e. relevant in practice, span of the history of medicine has shrunk considerably in the last century and half. At the time when Littré was editing and translating the Hippocratic Corpus (published 1839–1861) his main reason for doing so was to make the Hippocratic works useful in medical practice.<sup>66</sup> The situation changed rapidly soon after, and today the relevant literature for a student and practitioner of medicine is all very recent. In the Hippocratic corpus itself there are radically different attitudes towards the history of the subject, so much so that the author of *VM* feels compelled to defend the existence of the art of medicine against those who want to make a new start, when medicine, according to him, was already on the right track. Medicine was no different from other disciplines (and we must remember that there was no clear-cut distinction between disciplines such as medicine and philosophy)<sup>67</sup> in that there were plenty of attempts to brush aside everything anyone else might have said about it in order to lay a new foundation. The degree to which this was possible depended on the subject matter being dealt with. Theories about the nature and workings of the heavenly bodies as well as theories about the ultimate "building blocks" of matter, dead or alive, were up for grabs, while the study of things closer to hand, like the human body, animals and plants, to

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<sup>65</sup> Harrison (2000a) 195 (emphasis mine), who later says: "Herodotus also applies precisely the same criteria of truth to the question of the nature of divinity as to any other matter."

<sup>66</sup> Sigurdarson (1997b) 163–166.

name some, should to a greater degree resist attempts to throw old as well as new ideas out of the window to start afresh.<sup>68</sup> There is, potentially, a body of knowledge about these things, and at least some general familiarity with them.

The opening words of *Vict* express well the problematic nature of medicine to its own history:

εἰ μὲν μοί τις ἐδόκει τῶν πρότερον συγγραψάντων περὶ διαίτης  
ἀνθρωπίνης τῆς πρὸς ὑγιείην ὀρθῶς ἐγνωκῶς συγγεγραφέναι πάντα διὰ  
παντός, ὅσα δυνατόν ἀνθρωπίνῃ γνώμῃ περιληφθῆναι, ἱκανῶς εἶχεν ἂν  
μοι, ἄλλων ἐκπονησάντων, γνόντα τὰ ὀρθῶς ἔχοντα, τούτοις χρῆσθαι,  
καθότι ἕκαστον αὐτῶν ἐδόκει χρήσιμον εἶναι.

Unsurprisingly the author does not think the subject has been satisfactorily treated. But he does admit that parts of it have been sufficiently dealt with, though no one, before him, has treated the whole of it. After the first chapter he proceeds with his exposition, basing it partly on what he gathers from those who have written on the subject before him. But he does not indicate whether he is using material from someone else or whether it is his own contribution. This is in accordance with what he announces in chapter one. The approach is eclectic and it is any commentator's game to identify all the possible sources for the doctrines proposed.<sup>69</sup>

The treatise *VM* is well known for its criticism of the use of postulates in medicine. The author claims that there is no need for arguments from postulates as there already is an art of medicine. Ch. 2 starts with these words (CMG I, 1, 37, 1-4):

<sup>67</sup> For a recent discussion see Thomas (2000) ch. 5.

<sup>68</sup> Cf. Peck (1928) 1.

<sup>69</sup> On *Vict* see p 114 n 25.

ἰητρικῇ δὲ πάλαι πάντα ὑπάρχει, καὶ ἀρχὴ καὶ ὁδὸς εὐρημένη, καθ' ἣν  
τὰ εὐρημένα πολλά τε καὶ καλῶς ἔχοντα εὕρηται ἐν πολλῷ χρόνῳ καὶ  
τὰ λοιπὰ εὐρεθήσεται, ἣν τις ἰκανὸς τ' ἐὼν καὶ τὰ εὐρημένα εἰδὼς ἐκ  
τούτων ὀρμώμενος ζητέη.

And in ch. 20 he says (CMG I, 1, 51, 14-19):

νομίζω δὲ περὶ φύσιος γινώμαί τι σαφὲς οὐδαμῶθεν ἄλλοθεν εἶναι ἢ ἐξ  
ἰητρικῆς· τοῦτο δὲ οἷόν τε καταμαθεῖν, ὅταν αὐτὴν τις τὴν ἰητρικὴν  
ὀρθῶς πᾶσαν περιλάβῃ· μέχρι δὲ τούτου πολλοῦ μοι δοκεῖ δεῖν· λέγω  
δὲ αὐτὴν τὴν ἱστορίην, εἰδέναι, ἄνθρωπος τί ἐστίν καὶ δι' οἷας αἰτίας  
γίνεται, καὶ τᾶλλα ἀκριβέως. ἐπεὶ τοῦτό γέ μοι δοκееί ἀναγκαῖον εἶναι  
ἰητρῷ περὶ φύσιος εἰδέναι καὶ πάνυ σπουδάσαι.

These are rather strong claims to knowledge, not only of medicine but also of the whole of nature, and it is hard to detect a note of scepticism here. It is noteworthy that the author uses ἱστορίη for this knowledge, which is derived from the well tested method of trial and error: it denotes the accumulated body of knowledge acquired by the proper method.

*VM* has for many scholars been the central work of the Hippocratic corpus, together with the *Epidemics* I and III. It comes first in the editions of Littré and Jones and served as their criterion for what Hippocratic medicine was all about. In particular the attack on the use of postulates (ὑπόθεσις) in medicine has been applauded. The treatise starts with a vehement criticism of those who speak or write on medicine basing their discussion on a postulate such as the hot, the cold, the wet or the dry (or whatever).<sup>70</sup> The author grounds his criticism in the view that it is too simple to postulate the same causal principle for all diseases and for death among men (τὴν ἀρχὴν

<sup>70</sup> Thomas (2000) 157 (on ch. 20, and in particular on what the author says about φιλοσοφία and Empedocles): "... it may be read as an attempt by the author to differentiate himself from others, rather than a statement of clear and widely accepted divisions between thinkers."

τῆς αἰτίας τοῖσι ἀνθρώποισι τῶν νούσων τε καὶ θανάτου καὶ πᾶσι τὴν αὐτήν CMG I, 1, 36, 4–5). But it is not just that those who do that are wrong in many details, μάλιστα δὲ ἄξιον μέμψασθαι, ὅτι ἀμφὶ τέχνης εἰούσης ἣ χρέονταί τε πάντες ἐπὶ τοῖσι μεγίστοισι καὶ τιμῶσι μάλιστα τοὺς ἀγαθοὺς χειροτέχνας καὶ δημιουργοὺς (CMG I, 1, 36, 7–9).<sup>71</sup> There is an art of medicine already in existence and some are good practitioners of it and some are bad. This art has nothing to do with postulates as it is based on the collective experience of past generations. What they have found out is that diseases are caused by certain regimen, more specifically food, and should be treated by certain regimen.

The view of how the art actually was discovered, presented in *VM*, is much the same as the one found later in the proem to Celsus' *De Medicina*.<sup>72</sup> Of necessity men tried out various methods of treatment when they were in pain and dying, and through trial and error experiments through a long time much was found out about how to treat diseases (ch. 3). Where there is knowledge based on this method of discovery a postulate is completely irrelevant (ch. 1). The title of the work refers positively to the tradition of medicine<sup>73</sup> as opposed to some new and fanciful<sup>74</sup> theories that go against the art itself. In particular the author picks out physicians and "sophists" who claim that no one can know or practice medicine unless he knows what man is (ch. 20), and he seems to be attacking a method rather than particular individuals. But, as opposed to the Hellenistic Empiricists (see below), the criticism is not

<sup>71</sup> The main argument of the treatise is that there already is an art of medicine and that there is no need for foreign intervention. See Festugière (1948) 27 and Jouanna (1990) 156.

<sup>72</sup> It is not unlikely that Celsus based his account of the history of medicine on *VM*.

<sup>73</sup> The Greek title is ΠΕΡΙ ΑΡΧΑΙΗΣ ΙΗΤΡΙΚΗΣ.

<sup>74</sup> In ch. 1 κενῆς (empty) and καινῆς (new) are both transmitted. Jones in the Loeb ed. prefers κενῆς as "the writers objection is not that the postulate is novel, but that it is a postulate." 14 n 1, *Hippocrates* I. But καινός seems to be supported by the first line of ch. 13: ἐπὶ δὲ τῶν τὸν καινὸν τὴν τέχνην ζητούντων ἐξ ὑποθέσιος τὸν λόγον ἐπανελθεῖν βούλομαι. And



directed against knowledge of hidden causes and natural actions as such, but against the speculative, or hypothetical, nature of some particular theories. His point is that these philosophers and doctors attack the problem from the wrong end. One should not start with a theory of what man is, but rather end up with it. One must respect the already existing art (i.e. dietetics) and through it find out what man is. The author further claims that clear knowledge of nature is not to be had from other sources than medicine (νομίζω δὲ περὶ φύσιος γινῶναι τι σαφὲς οὐδαμῶθεν ἄλλοθεν εἶναι ἢ ἐξ ἰητρικῆς (CMG I, 1, 51, 14–15)), and he explains what this ἱστορίη contains, i.e. to know what man is, by what causes he is made and other things accurately (λέγω δὲ ταύτην τὴν ἱστορίην, εἰδέναι ἄνθρωπος τί ἐστὶν καὶ δι' οἷας αἰτίας γίνεται καὶ τᾶλλα ἀκριβέως (CMG I, 1, 51, 17–18)). We are to understand that this knowledge is based on experience, his own and that of other people in the past, acquired by the right method: trial and error.<sup>75</sup>

What does the author have against the use of postulates? The art of medicine does not need postulates (B I, 3; CMG I, 1, 36, 16-21):

ὥσπερ τὰ ἀφανέα τε καὶ ἀπορεόμενα, περὶ ὧν ἀνάγκη, ἤν τις ἐπιχειρῇ τι λέγειν, ὑποθέσει χρῆσθαι, οἷον περὶ τῶν μετεώρων ἢ τῶν ὑπὸ γῆν. ἃ εἴ τις λέγοι καὶ γνώσκοι ὡς ἔχει, οὐτ' ἂν αὐτῷ τῷ λέγοντι οὔτε τοῖς ἀκούουσι δῆλα ἂν εἴη, εἴτε ἀληθέα ἐστὶν εἴτε μή· οὐ γὰρ ἔστι, πρὸς ὃ τι χρὴ ἀνέγκαντα εἰδέναι τὸ σαφές

In some sciences, according to our author, the only way is by postulates as first hand experience of the subject-matter is impossible. But it is not so with the

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καινός is often used in the sense of "new and irrelevant" or "foreign". See Festugière (1948) 33 n 12.

<sup>75</sup> There is a fundamental difference between this and the ἱστορία of the Empiricists in that it contains the kind of information not allowed by the Empiricists. I.e. it obviously contains what the Empiricists regard as hidden causes and natural actions. But they have in common the belief that the content of this ἱστορία/α is potentially complete (cf. VM ch. 2). See below.

human body and what governs it.<sup>76</sup> Meteorology has therefore to use postulates but there is no need for them whatsoever in medicine. This also implies that medicine actually can claim more certainty for its knowledge than can cosmology and other sciences that deal with things below the earth and in the sky. Even if they hit upon the truth, there is no way to tell.<sup>77</sup>

What about the accurate knowledge the author claims to possess? He does not claim to possess accurate knowledge about the whole art of medicine and in ch. 9 he says it is impossible to use exact numerical measurement in medicine. But in chapter 12 he seems more optimistic about the power of the right method (CMG I, 1, 44, 4-7):

εἰ μὴ ἔχει περὶ πάντα ἀκριβεῖν, ἀλλὰ πολὺ μᾶλλον διὰ τὸ ἐγγὺς  
οἶμαι τοῦ ἀτρεκεστάτου δύνασθαι ἥκειν λογισμῷ ἐκ πολλῆς ἀγνωσίης  
θαυμάζειν τὰ ἐξευρημένα, ὥς καλῶς καὶ ὀφθῶς ἐξεύρηται καὶ οὐκ ἀπὸ  
τύχης.

And in chapter two he claims that the rest of the science will be discovered if anyone clever enough follows the traditional method of trial and error. Even if medicine is not accurate now, it will be in due time. But the accuracy he claims for medicine is not the accuracy of a simple mathematical deduction but the accuracy of including all the relevant details.

It has been debated how far the positive theory proposed in *VM* is immune to its own criticism of the use of postulates. According to the author there are a number of powers (δυνάμεις), such as "saltiness, bitterness, sweetness, sharpness, astringency, flabbiness and countless other qualities

<sup>76</sup> It is interesting to compare this with Aristotle's reasons for studying animals and how he relates this study to the study of the divine heavenly bodies, cf. *PA* I, 5. See chapter IV.

<sup>77</sup> Wasserstein (1972) argued that the author of *VM* endorsed the use of postulates in these other fields, and was only arguing against its use in medicine, but it can hardly be doubted that he regarded the use of hypotheses, necessary or not, as a negative sign if not a disqualification.

having every kind of influence, number and strength" (14) that govern the body and, if put out of balance, cause diseases. These powers are present in what we eat and the physician has to learn to control them and, in so doing, to take into account how robust the patient is. It has been argued that this theory is "almost as arbitrary and dogmatic as that in terms of the hot, the cold, the wet and the dry"<sup>78</sup> because the "salty", the "bitter" and so on are left vague and ill- or undefined" and because "he does not, in practice, follow his analysis through to the point where he can show that the type of constituents he refers to are indeed the causes of particular complaints."<sup>79</sup> If this analysis is correct, there is no essential difference between the nature of the author's knowledge and the one he criticises. But in his defence it has been said that "sweet and bitter are for him [the author of *VM*] phenomenal properties."<sup>80</sup> The theory,<sup>81</sup> which is of a "recognisable empirical type", "merely intends to establish connections between a variety of recurrent features of the world, and to assign to them a rough comparative value."<sup>82</sup> Among these features are the sweet, the bitter etc. and not the hot and the cold, the wet and the dry.

It is important to note what *VM* is not arguing against, as it seems absurd to claim that the hot and the cold, the wet and the dry are less phenomenal than the sweet, the bitter etc., though Theophrastus discusses the hot and the cold as theoretical entities (*CP* I, xxi, 4). In ch. 7 of *NatHom* it is argued that it is obvious from perception that phlegm is the coldest element, and the theory of illness and health argued for is largely based on the hot and

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<sup>78</sup> Lloyd (1979)148.

<sup>79</sup> Ibidem147.

<sup>80</sup> Hankinson (1992) 64; idem (1998) 64-69.

<sup>81</sup> The theory can, according to Hankinson, be cooked down to the formula:  $E = S/R$ ; where  $E$  = the effect of foodstuffs on an individual,  $S$  = the strength of the food and  $R$  = the robustness of the individual. The controversy hinges on why  $S$  = the sweet, the bitter etc. is more empirical than  $S$  = the hot and the cold, etc. See Hankinson (1992) 62.

the cold, the wet and the dry being causally effective as *phenomenal* properties. This is not what is argued against in *VM*, but rather a theory or theories that treat the wet and the dry, the hot and the cold as *the* properties of food that cause or cure diseases. In ch. 15 he says (CMG I, 1, 46, 18-26):

ἀπορέω δ' ἔγωγε, οἱ τὸν λόγον ἐκείνον λέγοντες καὶ ἄγοντες ἐκ  
ταύτης τῆς ὁδοῦ ἐπὶ ὑπόθεσιν τὴν τέχνην τίνα ποτὲ τρόπον  
θεραπεύουσι τοὺς ἀνθρώπους, ὥσπερ ὑποτίθενται· οὐ γάρ ἐστιν  
αὐτοῖσιν, οἶμαι, ἐξευρημένον αὐτό τι ἐφ' ἑωυτοῦ θερμὸν ἢ ψυχρὸν ἢ  
ξηρὸν ἢ ὑγρὸν μηδενὶ ἄλλῳ εἶδει κοινωνέον. ἀλλ' οἶομαι ἔγωγε ταῦτ' αὐτὰ  
βρώματα καὶ πόματα αὐτοῖσιν ὑπάρχειν, οἷσι πάντες χρεόμεθα,  
προστιθέασι δὲ τῷ μὲν εἶναι θερμῷ, τῷ δὲ ψυχρῷ, τῷ δὲ ξηρῷ, τῷ δὲ  
ὑγρῷ, ἐπεὶ ἐκεῖνό γε ἄπορον προστάξει τῷ κάμνοντι θερμόν τι  
προσενέγκασθαι· εὐθὺς γὰρ ἐρωτήσει· τί;

This argument is only effective if it is aimed against a *dietetic* theory which claims that the effective causal elements in foods are the hot and the cold, the wet and the dry. The contention is that the hot and the cold, the wet and the dry are superfluous hypothetical elements and that the sweet, the bitter etc. have proved to be the phenomenal characteristics of food that causes diseases and health. This far I think he can be defended. But as soon as he claims that the powers (sweetness, etc.) are actually what causes diseases and health, and not just the phenomenal qualities that indicate what foods, or what kind of foods cause diseases and health, he makes himself susceptible to the same kind of criticism as he levels against the hot and the cold, the wet and the dry as postulates.

The debate *VM* is a part of is on how to conduct medicine, on what principles one is to base one's practice. The scepticism expressed in *VM*

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<sup>82</sup> Hankinson (1992) 61. In Hankinson (1998) 66 he even argues that this makes medicine "a fallible, Humean science".

against the invention of speculative principles in medicine is not of the same kind as the scepticism of the Hellenistic empiricists: a general scepticism about the possibilities of knowledge. No such thing bothers the author of *VM*. His scepticism is directed towards the applicability of some too simple and speculative theories about the causes of diseases. Knowledge of hidden causes is necessary for medical practice, but this knowledge is not to be had from speculations about the nature of the universe, but must be gained in observations made of actual patients in the practice of medicine. This points to the past as an essential source of knowledge. Not only is the history of medicine, as originating in dietetics, an important justification for the status of τέχνη for medicine; when it comes to *doing* medicine, dealing with actual cases — diseases — , a treatment and understanding must be based on accumulated experience — a discovery over time. But the polemic is not only internal to medicine. The author of *VM* claims for medicine a knowledge of nature the philosophers do not have. So he is not only arguing for the autonomy of medicine, but also for the only right method of discovery. Philosophy, based on ὑπόθεσις, is not only irrelevant to medicine, it is irrelevant for the knowledge of nature in general. There is a reason for this, according to *VM*. Traditionally philosophers dealt with things in the sky and below the earth and theorising about these they had to use novel postulates, as there is no way to know the truth in these regions as there is no *test* of the truth; i.e. it is impossible to verify the truth or falsehood of the theories (ch. 1). Aristotle's reasons for studying the world of animals were that it made it possible to base the theories on detailed observations. "Meteorology" and "geography" are of necessity speculative, but medicine (and biology), according to this view, need not be. In their case it is possible to accumulate knowledge, and where that is possible the past holds the key to successful

application of the knowledge. But only if we know how to access and evaluate what it has to offer. The Hellenistic Empiricists developed a method to do just this. At the same time their scepticism of the use of reason was much more radical than anything we find in the Hippocratic Corpus, or indeed in Herodotus.

### 6. *The bookish empiricism of the Empiricists.*

There are two main sources for the Empiricists: Celsus (1<sup>st</sup> century CE) and Galen (2<sup>nd</sup> century CE). The following account is mainly based on the proem to Celsus' *De medicina* and on two treatises of Galen, *On the Sects for Beginners* (*SI*) and *An Outline of Empiricism* (*SubfEmp*). Galen and Celsus (though Celsus to a lesser degree) are mainly occupied in these writings with hammering the Methodists and demonstrating that their own medical method incorporates what is good in both Rationalism and Empiricism, i.e. that their art of medicine is the logical conclusion or culmination of the Rationalist/Empiricist debate. We should, therefore, expect them to stress, on the one hand, the similarities between the two positions, and how they complement each other, as they want to embrace them as one, and, on the other hand, their shortcomings, viewed individually, for the same reason. And it becomes clear in the last two chapters of Galen's *SubfEmp*, where he criticises named Empiricists for not acting like they should *as* Empiricists, that what he has been presenting is what he thinks Empiricism should be. The real life Empiricists did simply not live up to his ideas about them.

Empiricism arose in the third century BCE in opposition to what the Empiricists termed Rationalism or Dogmatism. The "Rationalists" relied on



causal explanations, which were again based on their theories about the nature and functions of the human body. They disagreed among themselves on *what* was the nature of the human body and on *how* it functioned. The Empiricists, seizing on this, proposed to drop causal explanations and arguments that had anything to do with hidden causes or actions, as there was no way there would or could ever be an agreement on this, and concentrate on what experience had taught about what works and works not in the treatment of diseases. In view of the proliferation of more or less fantastic theories about these matters this may seem a sober and healthy attitude.<sup>83</sup> But a closer look at the Empiricists will show that they were excessively conservative.<sup>84</sup> And, indeed, one of the impulses behind Empiricism may have been a belief in the perfection the art of medicine was supposed to have reached. According to Celsus (36<sup>85</sup>) some of the Empiricists believed that the remedies had already been explored and that there were no new kinds of diseases (*genera morborum*).<sup>86</sup> What is left for the physician to do, therefore, is to learn what experience has taught about what cures and what does not and to apply this in practice. While theoretical work is outlawed on principle, research, which earlier was essential (36, 38), would no longer be needed. But even if there were new kinds of diseases there was no need for theory, because the experienced physician would straightway see

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<sup>83</sup> See, e.g., Celsus 20-21 for different theories of digestion which led to differences in treatment.

<sup>84</sup> Compare Matthen's concluding remarks in his paper on the Empiricists (1988): "... the theory of Empiricism must have been more conducive to risk aversive strategies, and more open to change than Rationalism." I will argue the opposite.

<sup>85</sup> All references to Celsus by number are to the proem unless otherwise stated.

<sup>86</sup> Whether genuine new diseases did crop up or not or if what appears to someone to be a case of a new disease is only an expression of his ignorance was a debated issue. And even if you allow for novel cases it does not have to mean that there are new *causes* involved, as it might just as well be an expression of changing habits, particularly in diet and bathing (Plutarch's *QuestConviv* VIII, 9). And in any case the question of how to identify a new disease or (or as opposed to) a new kind of disease is not straightforward. Celsus himself didn't think there was anything permanent in the art of medicine, which is why he argued for, what he calls, the "conjectural" approach.



(visurum) to which disease it came nearest and treat accordingly (37). The successful application of this, known as the "transition to the similar", is what distinguishes the true craftsman from the layman.

It has often been argued that the scepticism of the Empiricists was of the dogmatic (i.e. Academic) kind.<sup>87</sup> They did not suspend judgement, as good Pyrrhonists, but dogmatically claim that it was impossible to know about the hidden causes of diseases and about the natural actions of the body (breathing, digesting, etc.) and even about the internal parts of the body (i.e. they regarded studies in anatomy as irrelevant to the art).<sup>88</sup> But it must be kept in mind that the Empiricists were not a homogenous group adhering to a single doctrine from the third century BCE. Micheal Frede has, in a series of papers<sup>89</sup>, argued for a historical/developmental account of the Empiricist's doctrine(s). According to Frede the first Empiricists were dogmatic sceptics, as described above, but their position changed under the influence of Pyrrhonism. He uses this to explain why Sextus claims that the Methodists, the third main Hellenistic sect, was more truly sceptical than the Empiricists (*P* I.236), a remarkable claim by someone believed to be among the Empiricists ([Galen] *Int*, K XIV 683, 11; DL IX 116). Sextus is here attacking early Empiricists, who were dogmatic sceptics, and not later Empiricists like Menodotus, a well known Pyrrhonist in his own right.

The three methodological elements in the Empiricist doctrine are αὐτοψία (or πείρα), ἱστορία and ἡ τοῦ ὁμοίου μετάβασις. The Empiricists seem to have agreed that these played an important role in medicine but they disagreed on what part each of them had in the art. The main controversy was on the nature and role of the μετάβασις. Αὐτοψία (or πείρα) is what the

<sup>87</sup> E.g. Edelstein (1933).

<sup>88</sup> See ch. IV on Aristotle on problems in dissection.

<sup>89</sup> Frede (1985); (1987b); (1988a).

individual physician sees for himself or experiences and therefore knows. There are different kinds and degrees of experience. There is the experience of spontaneous events, naturally occurring, followed by the patient either getting better or worse, like when a man suddenly gets a nosebleed. There is no apparent cause. In other cases the cause is apparent, as when a patient falls and his nose bleeds, but this happens by chance and not by choice. The first observations of this they called, according to Galen (*SubfEmp*, ch. 2; *SI* ch. 2), περίπτωσις (because "they chanced upon it"). Then there is extemporary experience (τό αὐτοσχέδιον), when it occurs to someone to do something when he or someone he is treating is in a certain condition. The inspiration for this can come from dreams or whatever<sup>90</sup>. There is, thirdly, the very important imitative experience (τό μιμητικόν). This comes about when the doctor tries again and again what he has experienced once or only a few times, i.e. not often enough to be able to say whether it happens like this always, most of the time, half the time or rarely. When they are confident that they know how consistent this is they call it θεώρημα and it is a part of the art (μέρος τῆς τέχνης) and trustworthy (πίστον). The art is nothing apart from many such θεωρήματα and a doctor is a person who has accumulated them. It is therefore a kind of memory (μνήμη τις). They also call this experience (ἐμπειρία). The fourth kind is practised experience (τριβικὴ πείρα). This is only for experts and applies to the μετάβασις. These four elements belong to αὐτοψία.

The second foot is ἱστορία. Ἱστορία is the report (ἐπαγγελία) of αὐτοψία, or experience written down. The same thing, therefore, is αὐτοψία for the one who makes the observation and ἱστορία for the one who is learning. Their status differs, but the content is the same. According to this, only those things which *have been* experienced count as ἱστορία. But some empiricists

<sup>90</sup> This could or at least should include any form of reasoning, as far as it is not supposed to be

defined ἱστορία more broadly as the report of things which have been seen or *as if* they had been seen. According to the first we have to judge what is truly history (si vera est ystoria) but to the other whether the history is true (si est vera) (*SubfEmp* ch. 8). This difference seems only to be semantic because in practice it does not seem to matter.<sup>91</sup> In both cases the physician has to sift out what is true from what is false in the written material (but see below). Both definitions have in common that only reports of experienced affections and treatments, or reports that look like observational reports, count, which means that everything that has been written on hidden causes and natural actions as well as anatomical studies will be discounted at the very start. There are four methods to evaluate the veracity of what has been written. First and foremost is correspondence with what the reader has himself experienced. This is the most trustworthy criterion but at the same time the least useful as there is no need for someone to read about what he has seen for himself (but see below). The most useful criterion is agreement (concordantia) among the sources (i.e. in the histories). They insist that this *principle* is based on experience and not on the nature of the thing itself. It is a matter of experience that what people agree on is, by and large, true. The third criterion is the learning and character of the writer. It is thus a matter of experience that Hippocrates is a trustworthy author. (The first criterion is useful in order to establish which author is trustworthy.) The last criterion is whether what is said resembles what the reader knows from his own experience (which points to the μετάβασις).

Ἱστορία does not have the same status as personal experience. But when the agreement of the best authorities is combined with the reader's own αὐτοψία (or πείρα), but only of few instances, and similarity with what is known by experience, it is no less credible than what has been found out by

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a source of knowledge in its own right.

experience. There are, therefore, many different degrees of the reliability of ἱστορία. It is no coincidence that the Empiricists were the first to study and write commentaries on "Hippocrates".

The third "foot" is the μετάβασις. It is mainly used in the case of new diseases and in order to find new and/or alternative remedies. The principle is grounded in experience, which has taught that similar diseases, and indeed locations in the body, need similar treatment and that similar remedies can replace remedies that are not available. It is mostly in relation to this that the Empiricists were criticised for using reason, because there must be some reasoning, analogical reasoning, involved in the application of this principle (e.g. Celsus 51). The Empiricists answer that this is not based on λόγος but that the application of the principle is practised, τριβική, because you have to be practised (τετρίφθαι) to be able to use it (*SI* ch. 2). The consequence of rejecting λόγος is, therefore, to embrace its opposite, τριβή.<sup>92</sup> The Empiricists would not deny that some thinking is involved in their practice. What they deny in particular is the use of analogy, i.e. arguments from the observable to the unobservable. Some of the later Empiricists who did not want to abolish reasoning argued instead for the use of *epilogismos*. It's main difference from analogy is that it draws inferences from the observed to the observable but not yet observed.<sup>93</sup> Hidden causes and natural actions are still outlawed.

<sup>91</sup> This is an interesting debate as it is about the precise meaning of a technical term.

<sup>92</sup> Τριβή seems to have gained status as a positive term in the third century in Rhetoric and Politics. Philodemus quotes Metrodorus for: [ἡ κ]αὶ τὴν πολιτικὴν ἐμπειρ [ί]αν, καθ' ἣν ἐκ τριβῆς καὶ ἱστορίας τῶν πόλεως πραγμάτων συνορώη ἂν τις οὐ κακῶς τὰ πλήθει συμφέροντα; Frg. 27 in A. Koerte, *Metrodorea*, Leipzig (1890) (= *Jahrbüchen für klassische Philologie*, Suppl. xvii, 529-597.) In the introduction to the *Precepts* (almost certainly post-Epicurean) it is said that one should not in ἡτρεῦειν attend primarily to λογισμῶ but to τριβῇ μετὰ λόγου. The author goes on to say that λογισμός is a kind of memory composed of what has been grasped by sense-perception. This is reminiscent of the Empiricists and the stress they lay on memory. See, in general, Frede (1990a).

<sup>93</sup> See Schofield (1996) for the use of the term in Epicurus, in particular, but also by the Empiricists.

Was the *μετάβασις* a constitutive part of medicine? Later Empiricists debated whether Serapion, the first Empiricist according to Celsus (10), thought so or not (*SubfEmp* ch. 4). Some, like Menodotus, said that it was not but that the Empiricists used it, others, like Cassius, that they did not even use it. Theodas said it constituted reasonable experience but some said it was more like an instrument (*ὄργανον*). Galen suggests that *ἱστορία* should possibly be thought of as an instrument as well (*ibidem*). The reason is that only *αὐτοψία* counts as a true source of experience and that *μετάβασις*, not being experience, can only lead us towards new experiences, i.e. only be used as a tool. Galen suggests that the Empiricists should look upon *ἱστορία* in the same way (*ibidem*). But the difference is that *ἱστορία* proper is thought of as *αὐτοψία* written down and, therefore, in a sense, equal to it. Here it is important whether we use the more inclusive or exclusive definition of *ἱστορία*. If *ἱστορία* is defined as real *αὐτοψία* (or *πείρα*) written down it can not be an instrument like the *μετάβασις*. But if it includes also what *seems* to be *αὐτοψία* written down it might be regarded as such, because it loses its immediate contact with *αὐτοψία*. But even in this case it only seems to concern *when* an account is accepted as *ἱστορία*: is it only after it has been established as authentic *αὐτοψία* or is it earlier, when it still only seems to be? The debate about the precise meaning of *ἱστορία* is important for the status of *ἱστορία* in the methodology of the Empiricists and is understandable in a context where the art as such is more or less based on *ἱστορία*.<sup>94</sup>

<sup>94</sup> Another important question to be asked at this point is whether *ἱστορία* is *αὐτοψία* or *ἐμπειρία* written down. If it is *ἐμπειρία*, and especially if it is understood in the narrower sense, *ἱστορία* turns out to be equivalent to the art of medicine in written form.

## 7. Empiricism from Herodotus to the Empiricists.

Ἱστορία is fundamental to the authors I have concentrated on in this chapter. For Herodotus it is knowledge he received from someone else, and more generally knowledge received by asking. His reasons for referring to his own work in the proem (and VII, 96,1) as ἱστορίη can be that he was thinking about it from the point of view of the reader/listener: it is what he reports to them. It is reported knowledge. Similarly some of the Hippocratic writers, in particular the author of *VM*, looked to the collected experience from the practice of medicine to base on their claim to the status of τέχνη for medicine. This properly attained knowledge the author of *VM* refers to in, chapter 20, as ἱστορίη. A significant part of this is from the past experience of those who have practiced medicine. It is, again, reported knowledge. With the Empiricists the term has gained a narrower meaning excluding everything but reported knowledge. But how narrow seems to have been hotly debated among them. It is the personal experience of practicing doctors that has been reported in written form. The debate on the precise meaning of ἱστορία turns on the status of ἱστορία in the art of medicine, as understood by the Empiricists. The art of medicine was, for them, in effect based on this accumulated and reported knowledge. The status of this "foot" was therefore a crucial issue.<sup>95</sup>

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<sup>95</sup> Heinrich von Staden (Staden (1975) 187-193) has convincingly argued that the Empiricist Tripos is essentially passive. The Empiricists did not try to find things out. They waited for the experiences to happen. He uses this to explain the decline of experimentation (of which there, admittedly, never was much) in the period where Empiricist medicine flourished. I would like to add, as a possible explanation of this passivity, that they were essentially conservative, and passive as a consequence of this. An important part of the Empiricist argument against the Rationalists was that most or all of the art of medicine had already been discovered, and that it had been discovered by experience. When the same things happened day after day *diligentes homines* noted what worked and began to prescribe it. It was only later that men began to discuss the reasons (Celsus 35-6). There is no doubt that αὐτοψία is the primary epistemological principle, but neither is there much doubt that for the Empiricists ἱστορία was in practice the most important "foot", as most of the art had already been discovered (*SubfEmp*



Aristotle's use of ἱστορία in the *Rhetoric* and *Poetics* is closely related to this. It refers above all to reported information. In the next two chapters I look closer at the nature of ἱστορία in the *Historia* of Aristotle. Trying to dig even deeper into the idea and nature of "natural history" I take Theophrastus' *Historia* of plants for comparison in chapter IV.

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ch 6). Hence the importance of keeping it aboard as a proper methodological foundation and not only as an instrument. It is important for their case that this is so and that there is no, or at least little, need for research in medicine. This is an essential part of Celsus' criticism of the Empiricists. There are new diseases, he says (49), even though this is rare. It is important to do something in new cases, however they are identified, and similarity is not always helpful (51). In cases like this it is better to have reason at your disposal as it makes you a better practitioner. This would be a fitting criticism of Empiricism understood as excessively conservative, i.e. unable to respond to novel situations. They are stuck in the past. And they are stuck in books. The truth is already out there in written form.



## CHAPTER III

### Observing Chicks

Reading some of the secondary literature on ancient Greek medicine, in particular the Hippocratic treatises, can lead one to think that ἱστορίη was a crucial element in the vocabulary of the Hippocratics.<sup>1</sup> We have already seen an important passage in the *VM* (discussed in ch. II), but apart from that the word and its cognates are rarely used. It does not seem to be an important part of medical vocabulary in the classical period, with one exception. The treatises *On Generation* (*Genit*), *On the Nature of the Child* (*NatPuer*) and *Diseases IV* (*Morb IV*) are the only treatises in the Hippocratic collection<sup>2</sup> to use the vocabulary of ἱστορ– to any substantial degree.<sup>3</sup> Whether these works are all by the same author has been debated, particularly since Littré's edition of the texts (L VII, 470-614) in 1851, where he, for the first time, collected them as

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<sup>1</sup> This is even more common in non-specialist comments on the Hippocratics. Luce (1997) 82 is a nice example: "... the word *historia* and its cognates are frequently used to describe the course pursued by the doctor and the close observation required of him." This is true, but not in the sense intended by Luce. It is true of the literature about the Hippocratics but not of the Hippocratic works themselves.

<sup>2</sup> Excepting the post-Epicurean *Praec*.

one. *Genit/NatPuer* undoubtedly form one continuous treatise, and they are transmitted as such, but the relation of *Morb IV* to *Genit/NatPuer* is a more difficult issue. Among those who think it is by the same author there is disagreement on whether it is a separate treatise or forms a part of the other two.<sup>4</sup> These, together with *Vict I*, are the only treatises in the Hippocratic collection that focus on the conception, formation and growth of the foetus — with some additional stuff thrown in. Other Hippocratic works that show interest in embryological problems are mainly concerned with obstetrical and gynaecological matters.

Aristotle probably knew these treatises, at least *Genit/NatPuer*. His opponents in *GA I*, 17-18 are most easily recognised in the position of *Genit* — though we cannot with any certainty affirm that Aristotle is attacking this particular work — while he argues against some of the positions of *NatPuer* in books II and IV. It has even been argued that the entire *GA* is composed in response to *Genit/NatPuer*.<sup>5</sup> He seems certainly to have noticed one of the most famous experiments in the history of biology,<sup>6</sup> the egg experiment as prescribed in *NatPuer* 29. Aristotle seems to have done the experiment, and he describes it in detail in *HA VI*, 3. The uses of the experiment in these different contexts will concern me later in this chapter.

In chapter IV I will investigate how Aristotle and Theophrastus did *ἱστορία* in the realm of living nature, with special emphasis on the subject

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<sup>3</sup> *Ἱστορίη* never occurs, *ἱστορέω* a couple of times and the rest of the instances (18) are *ἱστόριον*, "evidence" or "proof".

<sup>4</sup> Kahlenberg (1955) and C.W. Müller (1998) argue that *Morb IV* is by a different author, while Littré VII 463, Joly (1970) 9-13, Lonie (1981) 43-51 and Jouanna (1999) 392 all agree that it is by the same author, but disagree on whether they form one continuous treatise or not, Joly arguing that they do but Lonie and Jouanna (page 384) that *Morb IV* is a separate treatise. See also Regenbogen (1931) 158-9. In the rest of this chapter I discuss these treatises as if they were by one author.

<sup>5</sup> The affinities of the *GA* to *Genit/NatPuer* have often been noticed, but Morsink (1982) has gone furthest by arguing that *Genit/NatPuer* is Aristotle's dialectical opponent in the *GA*.

matter. At the end of this chapter I will address some methodological discussions of ἵστορία in Aristotle, with some examples from Theophrastus as well, but only after a detailed discussion of *Genit/NatPuer* and Aristotle's parallel discussions. The arguments of these Hippocratic treatises deserve serious attention and they are particularly interesting in comparison with Aristotle. I will approach the methodological context of ἵστορία through comparing Aristotle's and the "Hippocratic" uses of ἵστορία. But I will begin with the general problem of what is hidden, picking up the thread from my last chapter. The study of conception and the development of the foetus is particularly difficult as it concerns hidden processes and it is illuminating to see some of the approaches to hidden processes before we get to our embryological discussions.

### 1. *Analogy and the invisible.*

The modern debate about the role and nature of analogy in ancient Greek science and philosophy was, to a significant degree, focused on these treatises.<sup>7</sup> This is no coincidence, as embryology is a particularly difficult subject to study. It belongs to the part of medicine that has to do with the hidden actions of the body, and is in some respects similar to meteorology and element theory.<sup>8</sup> Direct observation was either not an option or only possible to a very

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<sup>6</sup> Cf. Harré (1981).

<sup>7</sup> Senn (1929), Regembogen (1931), Diller (1932), Lloyd (1966). Jouanna (1999) 318: "He [the author of *Genit/NatPuer*] was truly a giant in the art of analogy."

<sup>8</sup> Cf. VM 1 (CMG I, 1, 36: 16-18) on the ἀφανέα τε καὶ ἀπορρενόμενα ... ὅλον περὶ τῶν μετεώρων ἢ τῶν ὑπὸ γῆν. See Lloyd (1964) 53-4 on dogmatism and experience in meteorology.

limited degree.<sup>9</sup> Speculation was rife. This was not only the case in embryology, but the general situation regarding the internal structure of the human body.<sup>10</sup> Areas of particular interest in embryology were the role of the male and the female in conception, where the main question was whether the male alone contributed seed (σπέρμα) or not<sup>11</sup>; what part of the foetus developed first<sup>12</sup>, a question related to speculations about what was the governing principle of the body<sup>13</sup>; how the foetus is nourished<sup>14</sup>; etc. These

<sup>9</sup> There is no indication that dissection was considered prior to Aristotle, with the notable exception of *MorbSacr*, and he seems only to have dissected animals, cf. *HA* 494a21ff. See Lloyd (1979) 163 nn 193-194. *Cord*, which refers extensively to dissection, is a late treatise, roughly contemporary with Herophilus and Erasistratus. For a discussion of the evidence for the dating, with a review of previous scholars, see Duminil (1998) 169-181. His general characterisation of the treatise is best summed up with these two quotes (161): "C'est une description du cœur qui procède de l'extérieur vers l'intérieur, c'est-à-dire dans l'ordre où un anatomiste découvre les faits."; and (166): "C'est un ouvrage d'anatomie pure et le niveau de connaissances anatomique qu'il montre n'a d'égal dans aucun autre traité de la *Collection*."

<sup>10</sup> Cf. *HA* 494b19-24, where Aristotle states that the external parts are well known and have their own name, but the internal parts, in particular those of men, are unknown. He does not suggest that dissection is called for. Instead he says: ἀγνωστα γάρ ἐστι μάλιστα τὰ τῶν ἀνθρώπων, ὥστε δεῖ πρὸς τὰ τῶν ἄλλων μόρια ζῶων ἀνάγοντας σκοπεῖν, οἷς ἔχει παραπλησίαν τὴν φύσιν (22-24). See Lloyd (1979) 163 n 194. Kollesch (1997) argues that Aristotle's comparisons of human and animal anatomy is only understandable if we assume that Aristotle had extensive "knowledge" of human anatomy. She thinks he probably used Diocles' treatise on anatomy, but he was according to Galen the first to write on anatomy (Eijk F 17).

<sup>11</sup> The common view was that the male alone contributed seed, cf. Aeschylus' *Eu* 658 ff and Euripides *Or* 552-4 (path;r me;n ejfuvteusevn me, sh; dΔ e[tikte pai", to; spevrnΔ a[roura paralabou'sΔ a[llou pavra: a[neu de; patro;" tevknon oujk ei[h potΔ a[n.], as well as Plato *Ti* 91 d (oilon ajpo; devndrwn karpou;n katadrevyante", wJ" eij" a[rouran th;n mhvtran ajovrata uJpo; smikrovthto" kai; ajdiavplasta zw'/a ktl.) and Aristotle. The embryological treatises discussed here are lone voices for the view that the female contributes seed in the same way as the male — and they argue for it. See below for the use of evidence in *Genit*. Related is the view of Parmenides that the male is on the right hand side of the womb and the female on the left (DK28B17). For a discussion of this problem in general see Lloyd (1983) 86-94.

<sup>12</sup> Alcmaeon (DK24A13) and Hippon (DK38A15): the head; Empedocles (DK31A84) and Aristotle: the heart (see below for Aristotle); Anaxagoras: the brain (DK59A108); Diogenes: flesh (DK64A27); Democritus (depending on the evidence): the navel (DK68B148), the external parts (DK68A145) or the head and belly (DK68A145).

<sup>13</sup> Which is indeed what Aristotle uses his observation of the chick's development to do. He describes the observation in the *HA* VI, 461a6ff., and argues for the primacy of the heart in e.g. *PA* III, 666a19ff. and *GA* II, 739b34ff. It was also possible to argue against there being any *one* governing principle, cf. *LocHom* which opens with this statement: ἐμοὶ δοκεῖ ἀρχὴ μὲν οὖν οὐδεμία εἶναι τοῦ σώματος, ἀλλὰ πάντα ὁμοίως ἀρχὴ καὶ πάντα τελευτή .

things are impossible to observe without the gadgetry of modern medicine. Determining when a conception takes place is no easy matter, hence the ancient debate about the viability of children borne in the seventh, eighth or even tenth month.

The treatise *de Arte* states the problem about what is hidden, as it relates to medicine, succinctly like this (CMG I, 1, 16: 11-22; B 11, 1-3)<sup>15</sup>:

οὐ γὰρ δὴ ὀφθαλμοῖσι γ' ἰδόντι τούτων τῶν εἰρημένων [i.e. about the internal structure of the body] οὐδενὶ οὐδέν ἔστιν εἰδέναι. διὸ καὶ ἄδηλα ἐμοί τε ὠνόμασται καὶ τῇ τέχνῃ κέκριται εἶναι. ... ὅσα γὰρ τῇ τῶν ὀμμάτων ὄψιν ἐκφεύγει, ταῦτα τῇ τῆς γνώμης ὄψει κεκράτηται. <sup>16</sup> ... ὁ μὲν γὰρ ἐπεὶ οὐκ ἦν αὐτῷ ὄψει ἰδεῖν τὸ μοχθέον οὐδ' ἀκοῇ [i.e. from the patient] πυθέσθαι, λογισμῷ μετήει.

Where ὄψις and ἀκοή are not possible, the ὄψις of γνώμη, i.e. some kind of λογισμός, steps in.<sup>17</sup> The author of *de Arte* is very optimistic about the power of λογισμός, which turns out to consist in reading the signs (σημεῖα) coming from the body: the voice, respiration (πνεῦμα) and the discharges. What is seen gives insight into what is not seen. If the body does not yield these freely, the doctor has to step in and force the patient by exercise or purgatives to emit something that can be seen, e.g. sweat or vomit (B 12). But the key to interpreting these signs is a speculative theory about the nature of the internal

<sup>14</sup> The atomists: through the mouth; Alcmaeon: by the whole body.

<sup>15</sup> Note that the division of chapters 11 ff differs in Jones' Loeb edition (1923) from both CMG and B.

<sup>16</sup> Jouanna (1988) 261-2: "C'est la plus belle formule du traité." Cf. also 178.

<sup>17</sup> Cf. Herodotus II, 99 where he describes what he has been describing about as being based on ὄψις, γνώμη and ἱστορίη. We get a similar distinction here if we replace ἀκοή with ἱστορίη. What Herodotus more or less means by ἱστορίη in II, 99 is what he has been told by the relevant people, i.e. what he has heard.

structure and workings of the body and how it is supposed to be in health and sickness (B 10).<sup>18</sup>

The author of *VM* also looks to what is seen in order to learn about what is hidden.<sup>19</sup> But he distinguishes between two sources of diseases: powers (δύνამεις) and structures (σχήματα) (B 22, 1). The treatise is mostly concerned with the powers, about which the physician can, according to the author, gain accurate knowledge if he follows the proper method which has been at the disposal of medicine from the earliest of times (see my chapter II). But in the case of the structures, by which he means the body on the inside, it is necessary to look at objects on the outside, like bottles in different shapes, sponges and other things that can take in and expel liquid in a variety of ways.<sup>20</sup> Dissection, of humans or animals, is not considered.<sup>21</sup> What he has to say on the internal structure of the human body is based on the same analogical method as in *de Arte*.<sup>22</sup>

Embryology belongs to the part of medicine that deals with the internal structures of the human body, and is therefore reduced to speculation,

<sup>18</sup> The author has an account of the nature of the internal body, or the "cavity" (νηδὺς initially in the singular (B 10, 1), though he goes on to argue that the body has many cavities), which is hollow and supposed to be filled with πνεῦμα when healthy, but in disease with ἰχώρ, some kind of fluid (CMG I, 1, 15: 24; 16: 9; B 10, 3; 5). In *Il V*, 340 ἰχώρ is used of the juice of the gods, and it is not blood. A similar view is found in *Flat*. The author of this treatise argues that πνεῦμα is the basic element in disease and health, manifesting itself on the outside of the body as ἀήρ but on the inside as φῦσα (B 3, 1). This allows him to use the nature and behavior of ἀήρ as evidence for the effects of φῦσα on the inside of the body, ἀλλὰ μήν ἐστὶ γε τῇ μὲν ὀψει ἀφανής, τῷ δὲ λογισμῷ φανερός (CMG I, 1, 93: 4-5).

<sup>19</sup> καταμανθάνειν δὲ δεῖ ταῦτα ἔξωθεν ἐκ τῶν φανερῶν (CMG I, 1, 53: 12-13; B 22, 3).

<sup>20</sup> *Morb IV* (B 35, 2) explains how the head attracts phlegm from the body by its shape. It is like a cupping instrument (ὥσπερ σικύη), cf. *VM* (B 22, 3). See *Morb I* (Li VI 168: 13-18; Wittern (1974) 40: 18ff) and *Morb II* (Li VII 18: 14-18; B 11, 1) on how the head attracts phlegm by heat (like the cupping instrument does), and *Morb II* (B 26, 6; 27, 2) on how to apply the cupping instrument (σικύη), cf. also *VM* (CMG I, 1, 53: 16-18; B 22, 3).

<sup>21</sup> Cf *Jusj* (CMG I, 1, 4: 19-20): οὐ τεμέω δὲ οὐδὲ μὴν λιθιώντας, ἐκχωρήσω δὲ ἐργάτησιν ἀνδράσιν πρήξιος τῆσδε. There seems to have been, at least among some medical writers and practitioners, a clear view that cutting had nothing to do with medicine proper. Surgery was left to the menial practitioners.



unless someone finds a different way to deal with it. The author of *Vict I* is aware of these problems in embryology but claims to have found a solution. At the beginning of chapter 11 he states that men, excepting himself, do not know how to see the invisible through the visible, even though they in actual fact are imitating the nature of man in their arts (τέχναι).<sup>23</sup> The exposition of how this works (12–24: CMG I, 2, 4 136–142) is highly dogmatic.<sup>24</sup> He describes an art, like building, and goes on to claim that the art mimics the nature of man, the particular aspect of it he is dealing with in each analogy is then explained. Nowhere does he attempt to argue that the analogy holds, let alone how. The belief that it does seems to be based on the theory of the powers that govern the body, these powers also supposed to be at work in the arts/crafts.<sup>25</sup>

<sup>22</sup> See Lloyd (1979) 158–9 on *de Arte*, *VM* and the absence of dissection.

<sup>23</sup> οἱ δὲ ἄνθρωποι ἐκ τῶν φανερώων τὰ ἀφανέα σκέπτεσθαι οὐκ ἐπίστανται· τέχνησι γὰρ χρεόμενοι ὁμοίησιν ἀνθρωπίνῃ φύσει οὐ γινώσκουσι (CMG I, 2, 4, 134: 21–22). See Joly (1960) 62–63 for a discussion of how this relates to Anaxagoras, reviewing the controversy between Diller (1932) and Gomperz (1933).

<sup>24</sup> ἐγὼ δὲ δηλώσω τέχνας φανεράς ἀνθρώπων παθήμασιν ὁμοίας εἰούσας καὶ φανεροῖσι καὶ ἀφανέσι (B 12, 1; CMG I, 2, 4, 136: 5–6).

<sup>25</sup> This treatise is, unsurprisingly, about regimen, but it is the opinion of the author that he who wants to write correctly of human regimen must know the nature of man in general, in direct opposition to the views of the author of *VM* 20, another treatise concentrating on regimen. If the doctor is going to affect a man through food and exercise he must know what it is that controls the body (τὸ ἐπικρατέον ἐν τῷ σώματι) (2, 1; CMG I, 2, 4, 122: 26). This turns out to be fire and water, mutually dependent elements man and all the animals are made of (συνίσταται μὲν οὖν τὰ ζῶα τὰ τε ἄλλα πάντα καὶ ὁ ἄνθρωπος ἀπὸ δυοῖν, διαφόρου μὲν τὴν δύναμιν, συμφόρου δὲ τὴν χρῆσιν, πυρὸς καὶ ὕδατος. ταῦτα δὲ συναμφοτέρα αὐτάρκεά ἐστι τοῖσι τε ἄλλοις πᾶσι καὶ ἀλλήλοισιν, ἐκάτερον δὲ χωρὶς οὔτε αὐτὸ ἐωυτῷ οὔτε ἄλλῳ οὐδενί (3, 1; CMG I, 2, 4, 126: 5–8)). Fire has the power (δύναμις) to move, water the power to nourish (τὸ μὲν γὰρ πῦρ δύναται πάντα διὰ παντὸς κινῆσαι, τὸ δὲ ὕδωρ πάντα διὰ παντὸς θρέψαι (3, 1; CMG I, 2, 4, 128: 9–10)). Fire needs nourishment and water needs movement. The claim of the author of this treatise is to be able to control these powers through food and exercise. As a part of this general project he embarks, in chapter 6, on his embryology. The reason for the embryological discussion is, therefore, to lay a foundation for his theory of eating and exercising as therapy. Among the things he claims to be able to do is influence the sex of the child to be conceived (27, 1).

Jouanna (1999) 276, discussing *Vict I*: "Embryology, rather than being considered an observational science, becomes a branch of speculative philosophy whose reconstruction is guided solely by the belief that human anatomy and physiology reproduce the organisation and



2. Arguments by *ιστόρια*.

Now I turn to *Genit*, *NatPuer* and *Morb IV*. These treatises have much in common with *Vict I*, but there are important differences as well.<sup>26</sup> Both rely on analogy to explain what happens inside the body, but the treatises *Genit*, *NatPuer* and *Morb IV* do it in a way, and to such a degree, that it might be explained as a consciously adopted method.<sup>27</sup> The fundamental difference is that the author of these treatises argues for the validity of his analogy. This he does in chs. 13 and 29.<sup>28</sup>

Before I discuss this extraordinary argument, which uses *ιστόριον* at its core as well as a frame<sup>29</sup>, I will look at the uses of *ιστόριον* in the treatise in general (variously translated as "proof" or "evidence"). A good example to start with is the very beginning of *Genit*:

νόμος μὲν πάντα κρατύνει· ἡ δὲ γονὴ τοῦ ἀνδρὸς ἔρχεται ἀπὸ παντὸς τοῦ ὑγροῦ τοῦ ἐν τῷ σώματι ἑόντος, τὸ ἰσχυρότατον ἀποκριθέν· τούτου δὲ ἰστόριον τόδε, ὅτι ἀποκρίνεται τὸ ἰσχυρότατον, ὅτι ἐπὶ λαγνεύσωμεν σμικρὸν οὕτω μεθέντες, ἀσθενεῖς γινόμεθα.

Grand opening, invoking Pindar,<sup>30</sup> is followed by a double statement about the origin of seed in man: **a.** it comes from all the humours in the body, and **b.** it is

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unfolding of the universe." But how could embryology be an observational science in the absence of dissection or instruments to look inside the body?

<sup>26</sup> Hanson (1995) 293 stresses the similarities between the speculative embryology of the two treatises, while Lloyd (1983) 92 points to the difference in the way they argue for their positions. See below.

<sup>27</sup> Cf. Lloyd (1966) 356.

<sup>28</sup> The chapters of *Genit*, *NatPuer* and *Morb IV* are numbered continuously, following the edition of Littré, as if they were one treatise.

<sup>29</sup> As observed by Regenbogen (1931) 140-1 and Lonie (1981) 146-7, though they are wrong about the reference of the first *ιστόριον*.

<sup>30</sup> νόμος ὁ πάντων βασιλεὺς θνατῶν τε καὶ ἀθανάτων κτλ. (Plato *Grg* 484B; fr 152 Bowra).

the strongest part that is separated off. This latter claim is supported by reference to the common experience of men of being tired after sexual intercourse that culminates in orgasm with ejaculation. This is then followed by a physiological explanation of the internal workings of seed-production in men. So far nothing about women. Here *ιστόριον* refers not to a particular observation, but to an experience shared by the male audience, something they should recognise immediately.<sup>31</sup>

In chapter seven of *Genit* the author argues that both the man and the woman contribute male and female seed. His argument for this is not immediately convincing (if at all), and far from conclusive. He claims that some women have borne daughters to their partners, and then borne sons to other men — while the same men, after intercourse with other women, produce sons (B 7, 1). Thus both the man and the woman were separately able to beget a son, but did not do so together. These are the apparent facts that lead to the conclusion that both the man and the woman have male and female seed.<sup>32</sup> This is promptly explained by reference to the author's theory of the weak female sperm being able to overwhelm the strong male sperm to take the control (B 6). He then goes on to say: *χωρεῖ δὲ οὐκ αἰεὶ τοῦτο ἀπὸ τοῦ αὐτοῦ ἀνδρὸς ἰσχυρόν, οὐδὲ ἀσθενὲς αἰεὶ, ἀλλ' ἄλλοτε ἄλλοιον. καὶ τῆς γυναικὸς οὕτως ἔχει* (B 7, 3). It is obvious that this same observation could be used to support almost any theory about the male and the female contribution or non-contribution of sperm.<sup>33</sup>

Following this, in chapter eight, the author discusses the resemblance of the child to its parents. Children resemble their mothers in

<sup>31</sup> Cf. *HA* I passim. Book one is a heuristic introduction to the *HA* as a whole, where the parts of animals and men are compared. Women are only brought in in the very last chapter.

<sup>32</sup> Chapter seven starts: *συμβάλλεσθαι δὲ παρέχει ὅτι καὶ ἐν τῇ γυναικὶ καὶ ἐν τῷ ἀνδρὶ ἔστι γόνος καὶ θῆλυς καὶ ἄρσιν τοῖσιν ἐμφανέσι γινομένοισι.*

<sup>33</sup> Cf. Lloyd (1983) 92.

some respects and their fathers in some other respects. A fact most people would immediately recognise. This is explained by the theory of strong and weak sperm, but this time coming from different parts of the body. If the sperm from the father's nose is particularly strong the child will, *ceteris paribus*, get a nose that resembles the father's nose. Boys can even resemble their mother and girls their father (B 8, 2). Chapter eight ends with this statement: καὶ ταῦτά μοι καὶ τοσαῦτά ἐστιν ἱστορία τῷ προτέρῳ λόγῳ, ὅτι ἔνεστι καὶ ἐν τῇ γυναικὶ καὶ ἐν τῷ ἀνδρὶ καὶ κουρογονίῃ καὶ θηλυγονίῃ. Here he seems not to distinguish between observations, common experiences and the theories he proposes, as this is a general reference to the discussion started in chapter six about the relative strength and amount of seed, and not only to the observation just mentioned.<sup>34</sup> It includes both the common experiences of the audience *and* the arguments proposed.

In *Morb* IV, chapter 56, we are treated to no less than seven different ἱστορία, plus one extra (τοῦτο δὲ ἱστορίον ἄλλο μοι B 56, 7), against claims that drink enters the lungs. This was, and continued to be, a highly controversial issue. Plato claimed in the *Timaeus* that drink passes into the lung and that its function is to cool the heart (70c and 91a)<sup>35</sup>, but it was attacked by Aristotle (*PA* III, 3, 664b3-665a25)<sup>36</sup> and Erasistratus, while it was defended by, among other, Galen, who says that a small amount of drink can enter the windpipe (*PHP* VIII, 9, 9-25; *CMG* V, 4, 1, 2, 534: 26-538: 12).<sup>37</sup>

<sup>34</sup> Cf. Lonie (1981) 139; Regenbogen (1931) 141, discussing B 56: "ἱστορίον ist argumentum im weitesten Sinne."

<sup>35</sup> Cf. *Cord* 2 (Li IX 80-82; B 2, 1-3) and *Oss* 13 (Li IX 184-186; B 13, 2). Philiston of Locri, according to Plutarch (*QuestConviv* VII, 1, 699C), held this view before Plato, and so did Homer, Euripides and other persons of importance (op. cit. 697F-700B).

<sup>36</sup> Plainly stated in *HA* I 16, 495b16-19: ἡ μὲν οὖν ἀρτηρία τοῦτον ἔχει τὸν τρόπον, καὶ δέχεται μόνον τὸ πνεῦμα καὶ ἀφίησιν, ἄλλο δ' οὐδὲν οὔτε ξηρὸν οὔθ' ὑγρόν, ἢ πόνον παρέχει, ἕως ἂν ἐκβήζῃ τὸ κατελθόν.

<sup>37</sup> For a discussion and references, see Lonie (1981) 361-2.

This seems also to have been a highly controversial issue at the time of writing of this treatise (cf. B 56, 7). The argument is meticulously laid out (B 56, 2):

τοῖσιν οὖν δοκέουσιν ἀνθρώποισι τὸ ποτὸν ἐς τὸν πλεύμονα φέρεσθαι ἐναντιώσομαι· ἔχει δὲ οὕτως· χωρεῖ τὸ ποτὸν ἐς τὴν κοιλίην, ἀπὸ δὲ τῆς κοιλίης τὸ ἄλλο σῶμα ἐπαυρίσκεται. νοῆσαι δὲ χρή ὅκοσα μέλλω ἐρεῖν· λέγω δὲ ἱστορία, <sup>38</sup> ὅτι τὸ ποτὸν οὐ χωρεῖ ἐς τὸν πλεύμονα, ἀλλὰ ἐς τὴν κοιλίην, τάδε.

The view to be argued against is first stated<sup>39</sup>, then the fact, as he sees it, and he finally exhorts his audience to heed his argument, as he will produce evidence for his case. He then spells out the seven numbered ἱστορία<sup>40</sup>, plus the extra one. He ends the chapter (B 56, 8) by explaining the physiological reasons why drink does not go into the lung, i.e. it has the same structure as the first argument of the treatise discussed above. There is something like an ivy leaf over the windpipe (ὥσπερ κισσοῦ φύλλον )<sup>41</sup> which stops the drink getting into it. This crucial fact is left to the last. He then closes the account in a characteristic way: καὶ ταῦτα ἐς τοῦτό μοι εἴρηται.

The evidence he introduces is of the form: if it were the case that drink entered the lungs, X would happen. X does not happen. Therefore drink

<sup>38</sup> There is an interesting similarity between this phrase and the statement in VM 20: λέγω ταύτην τὴν ἱστορίην εἰδέναι, κτλ.

<sup>39</sup> In B 56, 1 he has explained, in a proper Aristotelian fashion, why the false belief may have come about: people have been fooled by the windpipe.

<sup>40</sup> ἓν μὲν τοῦτο ἱστορίον ἐστίν (B56, 2), δύο δὲ ἱστορία ταῦτά ἐστι (B56, 3), ταῦτα δὲ πάντα ἱστορία ἐστίν (B 56, 5 — πάντα might be a corruption of πέντε, as two more causes have been mentioned in 56, 3-4), ταῦτα μὲν τὰ ἱστορία ἕξ ἐστίν (B 56, 5 — Joly reads, with ms M ταῦτα μὲν τὰ ἱστορία· ἕξεστι κτλ. At this point Joly only counts five causes), ταῦτα δὲ ἱστορία ἑπτὰ ἐστίν (B 56, 7). It seems clear that the author lays much stress on the number of the ἱστορία he has, and I am therefore inclined to accept Lonie's corrections of ἕξεστι to ἕξ ἐστίν and πάντα to πέντε. If we read the text the way Joly does, the author stops counting in B 56, 5 — only to resume it in 6-7. This seems unnecessarily harsh. See Thomas (2000) 182-190 for a comparison of this argument with Herodotus II, 20-22 on the inundation of the Nile.

does not go into the lungs (*modus tollens*). According to the first argument the drink would stop us breathing or speaking. It obviously does not, therefore it does not enter the lungs. The second claims that our food would be too dry for digestion, if drink went into the lungs. The third is that purgatives clean the stomach, not the lungs. The fifth says that after heavy drinking our faeces become dark — another immediately recognisable observation. The sixth similarly claims that our urine smells of garlic after we have eaten it and the seventh refers to the experience of uncontrollable coughing when a small amount of phlegm enters the lungs. The additional argument asks how children could be nourished by breast feeding if the milk goes to the lungs. The fourth is particularly interesting. It deals, as the third, with purgatives. This time it is about the strength of purgatives. They burn and would harm the lungs. But why not the stomach? Here we are treated to a story of how the Lydians use stomachs from animals as sacks, which shows that stomachs are strong. This is an interesting strategy, to tell a story to lend credence to an *obscure* fact, crucially applied in ch. 13 (see below).

The arguments are not conclusive, and mostly question begging. They play on the expectations and experiences of a typical male audience, and do not rely on any privileged knowledge, except possibly the story of the Lybians. But why all this emphasis on evidence? Just before the end of the chapter the author explains why (B 56, 7):

καὶ ταῦτα οὐδ' ἂν ἐπηγαγόμεν ἔγωγε τῷ λόγῳ τοῦτο ἱστόριον οὐδέν,  
εἰ μὴ ὅτι πολλοὶ κάρτα τῶν ἀνθρώπων τὸ ποτὸν δοκέουσιν εἰς τὸν  
πλευμόνα χωρεῖν, καὶ ἀνάγκη ἐστὶ πρὸς τὰ ἰσχυρῶς δοκέοντα τὰ πολλὰ

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<sup>41</sup> Aristotle seems to be the first to call it ἐπιλωττίς (*HA* I 16, 495a28-30; *PA* III 3, 664b19ff).

ἱστορία ἐπάγεσθαι, εἴ τις μέλλει τὸν ἀκούοντα <sup>42</sup> ἐκ τῆς πρὶν γνώμης μεταστρέψαι τοῖσιν ἐνωτοῦ λόγοισι πείσειν.

In front of a disbelieving audience one way to rid them of their false opinions is to pound them with evidence to the contrary, preferably something they recognise immediately (a strategy similar to law-court speeches).

### 3. ἱστόριον, τεκμήριον, μαρτύριον and σημήριον.

Is ἱστόριον in *Genit*, *NatPuer* and *Morb IV* just a variation on τεκμήριον, σημήριον or μαρτύριον? <sup>43</sup> Τεκμήριον is used only once, in *NatPuer* 13 — to which I will return — , μαρτύριον never. If ἱστόριον means the same as τεκμήριον it would be less a variation as a replacement for τεκμήριον. When Aristotle in *GA I*, 17 tackles the problem of whether σπέρμα is drawn from the whole body, and, as a part of that, whether both the male and the female contribute σπέρμα, he refers to four τεκμήρια in support of the view, he will eventually refute, that it is drawn from all of the parts of the body. The first is the intensity of the pleasure involved in the sexual act, the second that mutilated parents beget mutilated offspring, the third that the offspring resembles its parents, both as a whole and in each of its parts, the fourth, following this up and supported by further μαρτύρια, that just as the whole thing originates in something it must be reasonable to believe that the parts each on its own also originate in something. It is apparent that these are the

<sup>42</sup> The reading of mss. M, H, J and K have ἄκοντα. Compare *VM* 1 τοῖς ἀκούουσι.

<sup>43</sup> Lonie (1981) 48: "The word ἱστόριον (= τεκμήριον) is peculiar to this series in the Collection ...". This is among his evidence that *Morb IV* is by the same author as *Genit/NatPuer*. Though the use of σημήριον in the treatises pushes for separating them. See below.



same kinds of things that the author of *Genit/NatPuer/Morb IV* refers to with *ιστόριον*.<sup>44</sup> It might therefore be reasonable to assume that *ιστόριον* is used in *Genit/NatPuer/Morb IV* roughly in the same sense as *τεκμήριον*. It is therefore all the more important to look closely at chapter 13, which I will do shortly.

*Σημήριον*, on the other hand, is used about as often as *ιστόριον* in the treatises, though these statistics do not reveal the significant fact that all but one of the instances of the use of *σημήριον* are in *Morb IV*. The single use of the term outside *Morb IV* (in *NatPuer B 20, 4*) is fairly unproblematic. The discussion concerns the cause of the growth of hair. The explanation proposed is that hair grows where the epidermis is porous. The *σημήριον* for this is that hair does not grow where the epidermis has been burnt. This seems similar enough to the use of *ιστόριον*. Most people had probably experienced something of the sort.<sup>45</sup> In *Morb IV* we also find it used in a sense similar to *ιστόριον*, e.g. *B 35, 1* (καὶ τοῦτο οὕτω γινόμενον πάντες ὁρόμεν) and, more importantly in *B 54, 5*, where it seems to refer to the very same thing as *ιστόρια* in *B 54, 6*.<sup>46</sup> But it is also frequently used in the narrower sense of symptom (*B 49, 2* (twice); *54, 6*; *54, 7*; *55, 6*; *57, 3*; *57, 6*), where the list of symptoms for a certain condition is sometimes referred to with *σημήρια* before and after.

It therefore appears that *ιστόριον* is not used in any strict technical sense in the treatises, at least not so as to distinguish it sharply from

<sup>44</sup> See also *GA I*, 18, 723b19.

<sup>45</sup> *Cord 2* (Li IX 80: 9 – 82: 6; *B 2, 1-3*), arguing that drink does enter the lungs, refers to the infamous pig-experiment as a *σημήριον* (Li IX, 80: 13; *B 2, 2*). A pig is given coloured water to drink, and while it is in the process of drinking its throat is cut. The coloured liquid is observed in the windpipe. Referred to by Galen in *PHP VIII*, 9, 25 (CMG V, 4, 1, 2, 538: 9-12).

<sup>46</sup> Lonie (1981) 352, ad loc 54, 5: "*σημήρια* = *ιστόρια* below [i.e. in 54, 6]." But Lonie (1981) 80 n 124: "... it seems to me that *ιστόριον* does not stress the factor of observation to the same degree as does *σημήριον*. Ultimately it does refer to observation, but although its use in this author often coincides with *σημήριον*, its reference is somewhat wider." "Ultimately referring to observation" is rather elastic.



τεκμήριον in general or σημῆριον as it is used on occasion in *NatPuer* and *Morb* IV. This does not mean, of course, that ἱστορίον is *just* an alternative to these other expressions and does not carry any weight of its own *in particular arguments*. We shall see how the use of τεκμήριον and ἱστορίον in *NatPuer* 13 might best be explained by the author's interest in distinguishing different kinds of evidence.

#### 4. Chicks and foetuses.

Now I turn to the most impressive argument in these treatises. *NatPuer* 13–29 is an exposition of the growth of the embryo in the womb. This is based on the justifiably famous egg experiment described in ch. 29. There it is used as evidence to justify the theory that the seed is within a membrane, that there is an umbilicus at the centre, that the seed draws in breath and expires it and that the membrane extends from the umbilicus (B 29, 1). But he goes on to say:

καὶ τὴν ἄλλην φύσιν τοῦ παιδίου, ἣν εἴρηκα, ὧδε ἔχουσιν εὐρήσεις  
πᾶσαν μέχρις ἐς τέλος, ὅπως μοι ἐν τοῖσι λόγοις ἀποτέφανται, ἣν  
βούληταί τις τοῖσιν ἱστορίοις, ὁκόσοις μέλλω λέγειν, χρῆσθαι.

The experiment consists in taking twenty or more eggs, hatching them under fowls and opening one egg each day to investigate it up to the time an egg hatches (B 29, 2):

σκοπέων εὐρήσει ἔχοντα πάντα κατὰ τὸν ἐμὸν λόγον, ὥς χρὴ ὄρνιθος  
φύσιν συμβάλλειν ἀνθρώπου φύσει.

This still sounds rather dogmatic, even though the author admits that there might be problems with the analogy. But in chapter 13 he presents evidence for the validity of the analogy. It is the equally famous six-day embryo he claims to have seen.<sup>47</sup> He does not refer to this as a *ἱστορίον*. He stresses instead that he actually saw this, supporting his claim with a story.<sup>48</sup> He was called upon to assist a relative, who had a valuable slave singer. She went with men and became pregnant. She knew this immediately, because the seed did not come out again after intercourse. He came to her six days after the event, told her to jump up and down, touching her buttocks each time with her heels. This way she aborted the embryo, which he then saw. The function of the story is to make the author's claim to have seen a six day embryo more believable, and it is, as we shall see, important for him that the audience believe this claim. It is, in his own words, from this observation that he produces the rest of his *τεκμήρια*. The weight he puts on this observation is best explained by the fact that it provides the link between the egg experiment and the account of the development of the foetus, i.e. it gives him the evidence he needs to rely on the analogy between the observable development of the chick and the development of the human embryo.

Chapters 12–29 are a carefully structured whole.<sup>49</sup> They start in 12 with a description of how the seeds from the parents mix, condense due to the heat and are filled (again due to the heat) with breath (*πνεῦμα*). The breath escapes and makes a passage and the seed draws in cold breath from the

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<sup>47</sup> Galen quotes extensively from the chapter in *Sem* (CMG V, 3, 1, 76: 12–22; K IV 525–6) and *FoetForm* (K IV 653–4) where he introduces it as: ἀκριβῶς τε ἅμα καὶ σαφῶς διηγήσατο κατὰ τήνδε τὴν ῥῆσιν. Galen defends the theory, explicitly against Aristotle, that the male semen forms a material part of the developing foetus (*Sem* 1).

<sup>48</sup> What we need to be convinced about is not that he actually saw what he saw, but first that it was actually an embryo and second that it was six days old (which it obviously was not). See Lonie (1981) 160–1 for an evaluation. Thomas (2000) 137 n 16 calls it a "particularly controversial case of autopsy."

mother, a process that continues throughout the pregnancy.<sup>50</sup> He supports this by comparing the process to burning wood, particularly green wood. He then continues his description by comparing the growing seed to a baking bread: it forms a membrane. The description of the development of the foetus is carried on in chapter 14. The description of the six day embryo (13) is inserted here, as it supports both the description in chapter 12 (i.e. of the membrane) as well as the details that get picked up in 29, where he describes what the egg experiment is supposed to prove. At the end of chapter 13 the author refers forward to the egg experiment as another *διάγνωσις*, describing it as a *ιστόριον* of the truth of the whole *λόγος*.<sup>51</sup> In 29 he fulfils his promise.<sup>52</sup> The egg experiment is, therefore, both in 13 and 29 referred to as *ιστόριον* for the whole account of foetal growth. The six day embryo in 13 is the link that makes the analogy successful. And it is surely not something the audience can recall immediately, if at all. He describes it as best he can, and we have little reason to doubt the honesty of the description, though we can doubt whether it was an embryo he saw. The description of the egg guides his description of whatever it was he saw.<sup>53</sup>

The accuracy or truthfulness of the description does not interest me in the present context. The link it provides between the egg experiment and the development of the human foetus is another matter and the fact that it is not described as *ιστόριον*. This last point might not seem important. Surely we must have a stronger indication that he is positively choosing not to call it a

<sup>49</sup> Cf. already Regenbogen (1931) 142.

<sup>50</sup> This is one aspect Aristotle objects to.

<sup>51</sup> *ἐρέω δὲ καὶ ἄλλην διάγνωσιν ὀλίγον ἐπὶ τούτῳ ὕστερον, ἐμφανέα παντὶ τῷ βουλομένῳ εἶδέναι τούτου πέρι, καὶ ἱστορίον παντὶ τῷ ἐμῷ λόγῳ, ὅτι ἐστὶν ἀληθές, ὡς εἰπεῖν ἄνθρωπον περὶ τοιούτου πρήγματος.*

<sup>52</sup> *Νῦν δὲ ἐρέω τὴν διάγνωσιν, ἣν ἔφην ἀποφανεῖν ὀλίγῳ πρότερον, κτλ (B 29, 1).*

<sup>53</sup> He begins his description in B 13, 3: *ὁκοῖον δ' ἦν ἐγὼ ἐρέω, οἶον εἴ τις ψοῦ ὤμοῦ τὸ ἔξω λεπτύριον περιέλοι, ἐν δὲ τῷ ἔνδον ὑμένι τὸ ἔνδον ὑγρὸν διαφαίνοιτο· ὁ τρόπος μὲν τις ἦν τοιούτος ἄλλος εἰπεῖν.* Cf Lonie (1981) 160-161.

ιστόριον than the mere fact that he does not refer to it with the word ιστόριον.<sup>54</sup> It is quite true that a ιστόριον is often something seen. The egg experiment is something that has to be seen to be believed<sup>55</sup> and in chapter 31, discussing whether twins are produced from one coitus or more, the ιστόριον referred to, the dog, the pig and other animals that produce more than one offspring, is something "we" see (ταῦτα αὐτοὶ ὁρέομεν γινόμενα) (B 31, 2). If being seen is a criterion for what is a ιστόριον then the seen embryo should be something that could be referred to as a ιστόριον. But, we saw above how ιστόρια are used to convince the audience of some propositions made by the author, where it either refers to common experiences or more or less convincing arguments, i.e. something accessible in the context of the presentation. This is not the case with the embryo. The author has seen it, and he stresses this point, but they have not. It is therefore important for him to tell a convincing story about how he came to see it, as dropped embryos are not lying around. This is the function of the story about the slave girl, belonging to a relative, who needs an abortion. If ιστόριον is what the audience is supposed to recognise immediately, whether it is something they have probably experienced, seen, heard, or just a convincing argument, the aborted embryo does not qualify. He can refer both to the egg experiment and the embryo as a διάγνωσις but if I am right about the use of ιστόριον for what is immediately recognised by the audience he may have a perfectly good reason not to refer to the embryo as a ιστόριον. This may also explain the use of τεκμήριον at the start of *NatPuer* 13. Here he is referring generally to his whole account of

<sup>54</sup> Lonie (1981) 163 argues that it is a ιστόριον in the sense that it is described as his autopsy (αὐτὸς εἶδον) B 13, 1, and he even invokes the idea of a ἱστωρ being a witness. Cf. also Thomas (2000) 165.

<sup>55</sup> καίτοι εἴ τις μηδέπω εἶδε, θαυμάσει ἐν ὀρνιθείῳ ᾧ ἐνεόντα ὀμφαλόν (B 29, 3).

foetal growth and not to particular pieces of evidence. This might have led him to shy away from the more specific (in this context) term ἱστόριον.

It might be retorted that the audience has not done the egg experiment. Quite true. But it is a notable feature of the egg experiment that the results of it are not described in detail — hardly at all, actually. What we get instead is a recipe for how to do it. And anyone could. It is also probable that most people had seen chicks in various stages of developments in broken eggs. Even I, accidentally, have.<sup>56</sup> So even though we should not expect the men to have gone home to do the experiment it was well within their reach to have direct experience of developing chicks. This is not the case for the aborted embryo.

### 5. Aristotle the experimentalist.

Aristotle seems to have done the experiment though. In the *HA* VI, 3, in the course of talking about the generation of birds (*HA* VI, 1-9), he describes in detail the development of the chick embryo (561a6-562a21), ending on this general note: ἡ μὲν οὖν γένεσις ἐκ τοῦ ψοῦ τοῖς ὄρνισι τοῦτον ἔχει τὸν τρόπον. The experiment with the hen's egg is generalised to the development of all eggs, though Aristotle does admit at the beginning that different time scales apply to birds of different sizes (cf. also 560b16-21). The first sign of the embryo, in the case of the domestic hen, is seen after three days and three nights. This is the heart, initially described as: ἀρχή, ὅσον στιγμή

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<sup>56</sup> From collecting, boiling and eating the eggs of geese a little late in the season. There was nothing systematic about it but I still remember, twenty years later, the "embryos" at various

αἱματίνη ἐν τῷ λευκῷ ἡ καρδία (561a11-12). This σημεῖον beats and moves as if it were ensouled (ὥσπερ ἔμψυχον). Two *flebes*-like *poroi* grow from this, full of blood, extending respectively to the yolk and the envelope surrounding the white. Soon after this the body takes form. The eyes are very swollen for a long time and the lower part of the body seems nothing compared to the upper part. After ten days the whole chick and all its parts are distinguishable (561a26-7; cf. also 560b19-20). There follows a detailed description of the ten day chick. Next (261b27ff.) he describes the chick around the twentieth day: "it already moves and squeaks inside, if you open the egg and touch"<sup>57</sup>, an invitation to the reader not unlike the "experiment" in *NatPuer*.

From this (there is much more detail in Aristotle's description) we can see that he at least opened an egg on each day the first few days, again on the tenth and finally "around the twentieth" day. He also seems to have dissected a ten day old chick (562a14-16). The chick's development is described in detail, unlike in *NatPuer* 29, and in this sense Aristotle is more committed to bringing out the details than our "Hippocratic" is. But what he saw on the third day made the most lasting impression on him — the heart. He repeatedly refers to the fact that the heart, or something analogous to it in bloodless animals, is the first part of the developing animal to appear,<sup>58</sup> enough so that Peck in a note to his Loeb edition and translation of the *GA* (742b36-7) complains: "He has repeated it almost continuously."

That this is based on the egg experiment is clear from *PA* III, 4, 665a33-b1:

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stages of development and can in that limited, but still immediate, sense relate to the descriptions in egg experiment.

<sup>57</sup> περὶ δὲ τὴν εἰκοστὴν ἤδη φθέγγεται τε κινούμενος ἔσωθεν, ἐάν τις θίγῃ διελὼν .  
Cf. 562a17-20. Most mss. read ἐάν τις κινῇ.

<sup>58</sup> E.g. *Juv* 3, 468b28-30; *GA* II, 4, 740a3-5; 740a17-18; 753b18-19; *PA* III, 4, 666a9-10.

συνισταμένων γὰρ ἐν μὲν εὐθέως τῶν ἐναίμων καὶ πάμπαν ὄντων  
 μικρῶν ἔνδηλα γίνεται καρδία τε καὶ ἥπαρ· φαίνεται γὰρ ἐν μὲν τοῖς  
 ψοῖς ἐνίοτε τριταίοις οὖσι στιγμῇς ἔχοντα μέγεθος, πάμμικρα δὲ καὶ  
 ἐν τοῖς ἐκβολίμοις τῶν ἐμβρύων.

Discussing the internal parts of blooded animals, Aristotle argues that only blooded animals have viscera (σπλάγχνα). His target is Democritus, who, according to Aristotle, had argued that the viscera in bloodless animals were too small to be visible. Arguing that the heart and the liver in blooded animals are formed as soon as they are visible, as Aristotle does, is obviously question begging. But this is not the only interesting thing about this. First, it points to the egg experiment as the primary source or evidence for the "fact" that the heart is the first part to be formed; second, that Aristotle also claims the evidence of aborted embryos without explicitly claiming to have seen one for himself.

Now we need to see what he does with these facts. The most relevant discussion is *GA* II, 4, 739b33ff., where Aristotle describes in general the development of the embryo. He begins his description from the time the foetation (κύημα) has set<sup>59</sup>, which is also the point of departure for *NatPuer* 13 (chapter 12 being concerned with what happens when the male and female seeds are mixed). This is the moment it has become an individual, like the seed from a plant, which he explicitly compares it with. The plant seed, as well as the foetation, has the first principle (ἀρχή) in itself potentially, and as soon as it has become distinct a shoot and a root is thrown out from it, the root being necessary to draw in nourishment (cf. what happens when the heart has been formed in the egg, according to the *HA*). This is also what happens in a

<sup>59</sup> The semen from the male "sets" the ἀπόκρισις of the female, like rennet sets milk, 739b20-33.



foetation. As the growing foetation needs nourishment, and the ultimate form of nourishment for an animal is blood, the heart grows blood vessels as receptacles for the blood (740a19-24). δῆλον δὲ τοῦτον ἐκ τῶν ἱστοριῶν καὶ τῶν ἀνατομῶν (23-24).<sup>60</sup> The foetation has all the parts of the growing animal potentially, but it is the heart that develops first in actuality (740a4-5):

καὶ τοῦτο οὐ μόνον ἐπὶ τῆς αἰσθήσεως δῆλον (συμβαίνει γὰρ οὕτως)  
ἀλλὰ καὶ ἐπὶ τοῦ λόγου.

Aristotle is not here satisfied with the bare fact, clear to the senses, that the heart develops first, a probable reference to the egg experiment. This is also clear to reason. There is a similar passage in the *PA* II, 1, 646a29-30. He is explaining how and why the essential order of things is the reverse to their order of formation, i.e. that what is first in nature is last in formation: οὐ μόνον δὲ φανερόν ὅτι τοῦτον ἔχει τὸν τρόπον ἐκ τῆς ἐπαγωγῆς, ἀλλὰ καὶ κατὰ τὸν λόγον. There follows an argument based on the roles of matter and form, or λόγος. When something comes to be the matter is informed and it is only at the end of the process that the thing has acquired its complete form. This is an essential principle in his theory of generation, as it determines, for Aristotle, what needs to be explained. It is the end product, the fact that man begets a man.<sup>61</sup>

The *PA* III, 4 is a lengthy argument for the centrality of the heart, with emphasis on the heart as an ἀρχή of the blood-vessels as well as of sensation. Then (666a19-23):

<sup>60</sup> This is a reference to *HA* III, 3. In the *PA* III, 4 Aristotle explains how the heart, and not the head, is the ἀρχή of the blood-vessels and in the process makes this reference (666a8-11): ἐκ τῶν ἀνατομῶν δὲ κατάδηλα μᾶλλον ταῦτα, καὶ ἐκ τῶν γενέσεων· εὐθέως γὰρ ἐστὶν ἔναιμος πρώτη γινομένη τῶν μορίων ἀπάντων. I discussed Aristotle's references to the *HA* (and the *Dissections*) in chapter IV. It is obvious that this was a matter he greatly stressed.

<sup>61</sup> Cf. *PA* I, 1, 640a11-27, contra Empedocles.

οὐ μόνον δὲ κατὰ τὸν λόγον οὕτως ἔχειν φαίνεται, ἀλλὰ καὶ κατὰ τὴν αἴσθησιν. ἐν γὰρ τοῖς ἐμβρύοις εὐθέως ἡ καρδία φαίνεται κινουμένη τῶν μορίων καθάπερ εἰ ζῶον, ὡς ἀρχὴ τῆς φύσεως τοῖς ἐναίμοις οὔσα.<sup>62</sup>

The λόγος is supported by the αἴσθησις, and the αἴσθησις is supported by the λόγος. The two seem to be interdependent but it is important to see how this interdependence works. But first a brief look at the relation of observation and theory in Theophrastus.

Theophrastus agrees with Aristotle on the relation of observation and theory, as the opening discussion about generation from seed in the *CP* I, i, 1 shows:

ἡ μὲν οὖν ἀπὸ τοῦ σπέρματος γένεσις κοινὴ πάντων ἐστὶν τῶν ἐχόντων σπέρμα, πάντα γὰρ δύναται γεννᾶν. τοῦτο δὲ καὶ τῇ αἰσθήσει φανερόν ὅτι συμβαίνει, κατὰ δὲ τὸν λόγον ἴσως ἀναγκαῖον ἡ γὰρ φύσις οὐδὲν μὲν ποιεῖ μάτην, ἥκιστα δ' ἐν τοῖς πρώτοις καὶ κυριωτάτοις, πρῶτον δὲ καὶ κυριώτατον τὸ σπέρμα· ὥστε τὸ σπέρμα μάτην ἂν εἴη μὴ δυνάμενον γεννᾶν, εἴπερ τούτου χάριν αἰεὶ τὸ σπέρμα καὶ πρὸς τοῦτο πέφυκεν.

All plants that have seed can be generated from seed. This is not only clear from observation but may also be necessary according to λόγος. These accounts by Aristotle and Theophrastus are based on the same principle: τῇ αἰσθήσει φανερόν / ἐπὶ τῆς αἰσθήσεως δῆλον and ὅτι συμβαίνει / συμβαίνει γὰρ οὕτως. That the facts are as stated is clear from αἴσθησις. But they are also based on λόγος. In Aristotle there follows an argument about the governing principle of the growing embryo (see below) which shows that the heart *must* be the first to develop in the embryo if the embryo is to develop at

all. Theophrastus is arguing at a much more general level, and the argument he appeals to is the well known teleological principle from Aristotle's philosophy of nature: nature does nothing in vain. As a seed that could not generate would be in vain it must be concluded that all seeds can generate. The agreement of theory and observation is paramount for both Theophrastus and Aristotle. The λόγοι of the explanatory works must agree with the observations and, in general, the ιστορίαι.<sup>63</sup>

#### 6. Observation and theory.

How this interdependence works is clearer from the second half of *GA* I, 1, which deals with the question of how the sperm from the male works as an efficient cause in generation. In order to appreciate this argument it is important to see it in the context of the debate it is a part of. I have already discussed the argument in *Genit* 7 and 8 about the male and female contribution to conception. The author of *Genit/NatPuer* argued that both the male and the female contributed seed and he uses this to explain how the offspring comes to look like its parents. Any theory of the nature of conception

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<sup>62</sup> Cf. *Juv* 468b28-469a1.

<sup>63</sup> Cf. the very first paragraph of the *CP*, which is the closest we get to a programmatic statement about the relation of that work to the *HP*:

τῶν φυτῶν αἱ γενέσεις ὅτι μὲν εἰσι πλείους, καὶ πόσαι καὶ τίνες, ἐν ταῖς ιστορίαις εἴρηται πρότερον· ἐπεὶ δ' οὐ πᾶσαι πᾶσιν, οἰκείως ἔχει διελεῖν τίνες ἐκάστοις καὶ διὰ ποίας αἰτίας, ἀρχαῖς χρωμένους ταῖς κατὰ τὰς ἰδίας οὐσίας· εὐθὺ γὰρ χρὴ συμφωνεῖσθαι τοὺς λόγους τοῖς εἰρημένοις.

The causal account of the *CP* must agree with what has been said about each plant in the *HP*. The varieties (i.e. the differences) of the generation of plants have been stated in the *HP*, and the causal account to be given must be in accordance with this, i.e. this is what must be explained. Here συμφωνεῖσθαι corresponds to περὶ ὧν τε γὰρ καὶ ἐξ ὧν εἶναι δεῖ τὴν ἀπόδειξιν in the passage from *HA* quoted below. The causal or demonstrative account must be *about* and *based on* what has been said in the *HA*, i.e. it must agree with it.

has to explain this fact.<sup>64</sup> How this came about was a highly controversial issue. The theory Aristotle mainly argues against is the so-called theory of pangenesis.<sup>65</sup> The author of *Genit/NatPuer* is a representative of this theory, i.e. the theory that the resemblance, part for part, of an offspring to its parents is best explained by the seed coming from all the parts of the body of the parents. In his version the parts are distributed by the actions of πνεῦμα, like going to like<sup>66</sup>, so as to make the new individual (chs. 12 and 17). The theory of *Genit/NatPuer* is thoroughly mechanical. Aristotle presents instead a theory known as epigenesis.<sup>67</sup> This theory, in short, says that the sperm from the male carries with it a soul-principle, the form, which sets in motion a series of events in the matter provided by the female. These motions cause the growth of the individual embryo. One of the most notorious aspects of this theory is the claim that the male provides the form, the female the matter. I will not be concerned with this aspect of the theory *per se*<sup>68</sup> but rather with the nature and role of the semen in conception.<sup>69</sup> The semen, in the male, and the menses, in the female, are parallel substances. They are both residues from concocted nourishment. And not any residues, but the final, most concocted, residue, i.e.

<sup>64</sup> It should be noted that this can be understood in two ways: A. a particular child/offspring shares many characteristics with its parents (eye-colour, shape of nose, sex) ; B. parents of a species only beget offspring of the same species (Aristotle was mainly interested in B: man begets man: *Met* 1032a25; 1033b32; 1049b25-9; 1070a28; 1070b31; *Ph* 193b8; 194b13; 198a27; 202a11; *PA* 640a25; 641b26ff.; 646a33; *GA* 715b2-4; 735a21; *de An* 415a28; b7). See Furth (1988) 110-111.

<sup>65</sup> For all these matters Lesky (1951) should be consulted. See also Lloyd (1983) part II, Furth (1988) 113-115, Elliott (1997) *passim*. For those interested in how these theories compare with modern views, I refer to Needham (1959) and the footnotes in Furth (1988).

<sup>66</sup> Opposed by Aristotle in *GA* II, 4, 740b12ff

<sup>67</sup> For his refutation of the pangenesis view, see *GA* I, 18, 722a1-724a13. Lloyd (1983) 96-97, Furth (1988) 114-115.

<sup>68</sup> See Lloyd (1983) 94-105, Elliott (1997) *passim*.

<sup>69</sup> Immediately after refuting the pangenesis theory in *GA* I, 18 Aristotle writes (724a14-17): ἀρχὴ δὲ καὶ ταύτης τῆς σκέψεως καὶ τῶν ἐπομένων πρῶτον λαβεῖν περὶ σπέρματος τί ἐστίν· οὕτω γὰρ καὶ περὶ τῶν ἔργων αὐτοῦ καὶ τῶν περὶ αὐτὸ συμβαινόντων ἔσται μᾶλλον εὐθεώρητον. His theory of the nature of semen is an important part of his refutation of this theory.

the generative residue. As the female is colder by nature than the male she cannot concoct the residue to the same degree as the male. As a result of this the female residue lacks the principle of soul (ἐν γὰρ οὐκ ἔχει μόνον τὴν τῆς ψυχῆς ἀρχήν GA 737a29-30). What it has is all the parts of the fully grown individual *potentially*.

In the GA II, 1 Aristotle turns to the question of how an individual can be generated from sperm (733b23-24):

περὶ ὧν ἐστὶν ἀπορία πλείων, πῶς ποτε γίγνεται ἐκ τοῦ σπέρματος τὸ φυτὸν ἢ τῶν ζῶων ὁτιοῦν. ἀνάγκη γὰρ τὸ γιγνόμενον καὶ ἐκ τίνος γίγνεσθαι καὶ ὑπὸ τίνος καὶ τι.

The material, the "out of which" (ἐκ τίνος), comes from the female. But this is not the question he is concerned with here. The problem he tackles in the second half of II, 1 is the agent, the ὑπὸ τίνος. How does he produce the τι, the individual? He must supply the inert matter of the female with the principle of soul (i.e. with life) and as soul (with the exception of rational soul) cannot exist apart from some body, or a part — as a part of a living body cannot exist apart from soul<sup>70</sup> — that is ensouled this must happen through a physical medium. The sperm, which is this medium, has, therefore, either to be soul, be part of soul or have soul. And this must come from the begetter, i.e. the father. Aristotle uses the analogy of automatic puppets to illustrate how the father, who is absent, can cause the necessary motions in the growing embryo. Just like the movements of the automatic puppets are caused by the external mover that turned them on, even though he is not in touch with them anymore, so the father, as the first external agent, is the cause of the motions in the womb. But once the sperm has connected with the female residue, and "turned it on", it

<sup>70</sup> As Aristotle repeats frequently, a dead eye is only an eye in name (homonymously).

evaporates, and as its movements stop each of the parts acquire soul (GA 735a12-17):

ταύτης μὲν οὖν οὐθὲν μόριον αἴτιον τῆς γενέσεως, ἀλλὰ τὸ πρῶτον  
κινήσαν ἔξωθεν. οὐθὲν γὰρ αὐτὸ ἑαυτὸ γεννᾷ· ὅταν δὲ γένηται, αὖξει  
ἤδη αὐτὸ ἑαυτό. διόπερ πρῶτον τι γίγνεται, καὶ οὐχ ἅμα πάντα. τοῦτο  
δὲ γίγνεσθαι ἀνάγκη πρῶτον, ὃ αὖξήσεως ἀρχὴν ἔχει· εἴτε γὰρ φυτὸν  
εἴτε ζῶον, ὁμοίως τοῦτο πᾶσιν ὑπάρχει τὸ θρεπτικόν.

The reason why one part is generated first is that the initial movement comes from the external generator, who is not in touch with the creation any more. It, therefore, needs its own principle of motion. There is nothing about this having to be the heart, only that this has to have the lowest, most common, form of soul: nutritive soul. The argument ends with these words (735a23-26):

ὥστ' εἰ ἡ καρδία πρῶτον ἐν τισι ζώοις γίγνεται, ἐν δὲ τοῖς μὴ ἔχουσι  
καρδίαν τὸ ταύτη ἀνάλογον, ἐκ ταύτης ἂν εἴη ἡ ἀρχὴ τοῖς ἔχουσι,  
τοῖς δ' ἄλλοις ἐκ τοῦ ἀνάλογον. <sup>71</sup>

The focus of the argument is the problem of what makes the stuff in the woman — the sperm from the male and the residue the mother contributes — grow into a specific living being. The formation of the foetation has been described in mechanical terms, using principles at work in the female body, in particular the actions of the breath (πνεῦμα) (also the most important element in *NatPuer* 12).<sup>72</sup> Like a plant seed that is formed on and by the plant it is the seed of, the foetation needs some governing principle when it no longer is governed by the parent. The plant seed is on its own when it falls to the ground. The foetation, when it has set, is also on its own, in this respect. It is like a son who sets up

<sup>71</sup> The very last sentence of II, 1 is: τί μὲν οὖν ἐστὶν αἴτιον ὡς ἀρχὴ τῆς περὶ ἑκάστον γενέσεως, κινεῖν πρῶτον καὶ δημιουργεῖν, εἴρηται πρὸς τὰ διαπορηθέντα πρότερον.



his own house "independently from his father" (740a5-7).<sup>73</sup> There must be a governing principle to order the rest of its growth and this must be present from the start, because, if it comes later from outside, when would it do so? He explicitly argues against Democritus, who, at least according to Aristotle, had argued that the external parts of the animal are distinguished first. But something must govern the growth of the external parts right from the beginning. This is why (διό) the heart is the first to appear in all blooded animals (740a17-18).

The important point to see in this case is that the argument is not that the *heart*, or any other specific part, is the first to develop, but that whatever part is first to develop in the embryo *is* this principle — with all that comes with it. If it is established that the heart is the first to develop, the heart has nutritive soul.<sup>74</sup> It could therefore be said that this procedure allows Aristotle to dig deeper into the hidden aspects of the living body. His theory about the heart and its role in the living body, in particular the developing foetus, gives him much more "information" about the heart than the author of *Genit/NatPuer* can claim. But this also makes Aristotle vulnerable to over interpretation if not false observations. A case in point is his notorious claim that the heart had three cavities, where his concern with the heart as ἀρχή and, following that,

<sup>72</sup> Cf. Matthen (1989) 171.

<sup>73</sup> Excluding, or at least radically diminishing, the mother's contribution to the formation of the developing embryo calls for a radical solution to this problem. The embryo is in physical contact with the mother and not the father.

<sup>74</sup> Cf. *Met.* 1035b25-27 on parts and wholes in living beings: in a sense the parts are prior, in a sense not. But some are ἅμα: ἓνια δὲ ἅμα, ὅσα κύρια καὶ ἐν ᾧ πρῶτω ὁ λόγος καὶ ἡ οὐσία, οἷον εἰ τοῦτο καρδία ἢ ἐγκεφαλός· διαφέρει γὰρ οὐθὲν πότερον τοιοῦτον. Here Aristotle does not want to take sides on the issue of the priority of the heart and the brain and insists on the theoretical nature of the *first* organ. This passage is usually taken to mean that the heart and possibly the brain are prior in the same sense as the other parts but differ in that the whole can not exist without these parts. This would only make them partly ἅμα and there seems to be a multitude of other parts the whole can not survive without (e.g. the liver). I read him here as saying that the first organ to develop, be it the heart or the brain, already in the beginning has within it the whole being (potentially).



finding the ἀρχή in the heart, as well as the superior position of the middle, may have interfered with his observations.<sup>75</sup>

### 7. *Ἱστορία and zoological demonstrations.*

This correlation of observation and theory marks a crucial difference for the role and uses of ἱστορία/ἱστόριον. These are two different words, for sure, and it is not possible to compare ἱστορία and ἱστόριον as if they were the same word, even though they share the same stem. But this still shows the variety of uses of words with the stem ἱστορ- and, with the similarity in argument — i.e. about the heart — gives an insight into uses in different contexts. This difference is connected with Aristotle's ideal of knowledge, which is very different — more sophisticated, some might say — than in the Hippocratic treatises I discussed above. It has been forcefully argued, and is now generally accepted, that ἐπιστήμη in Aristotle is closer to our "understanding" than "knowledge", i.e. that it involves knowing *why* a certain fact is as it is.<sup>76</sup> This is related to two well known distinctions in Aristotle's epistemology: between what is knowable to us and knowable in nature<sup>77</sup>, on the one hand, and between knowing something ἀπλῶς and knowing "in the sophistical way, or incidentally" (τὸν σοφιστικὸν τρόπον τὸν κατὰ συμβεβηκός )<sup>78</sup>.

<sup>75</sup> E.g. *PA* 666b32ff.; *Somn* 458a16ff. See Lloyd (1991) 243-4.

<sup>76</sup> Burnyeat (1981). Jonathan Barnes had earlier, in the first edition of his translation of the *APo* (1975) consistently translated ἐπιστήμη with "understanding", but this had more to do with his mode of translating (abandoned in the second edition (1993)) than a philosophically rich interpretation.

<sup>77</sup> E.g. *APo* I, 2, 71b33-72a5.

<sup>78</sup> *APo* I, 2, 71b9-12 and I, 5, 74a27-32.

To know something ἀπλῶς is to know at what hierarchical level of generality a predicate holds and holds essentially. Aristotle exemplifies this in *APo* II, 5 with one of his favourite examples: triangles. Isosceles triangle "has two right angles", i.e. the sum of its internal angles equals the sum of two right angles. The same goes for all triangles we know of. So why do isosceles triangles have two right angles? It is not because they are isosceles but because they are triangles. Having two right angles does not belong ἀπλῶς to some species of the genus triangle and not to some higher category, like a figure. It belongs to triangle as such. Every species of triangle has two right angles because it belongs to the genus triangle. To know "incidentally" is not to know at what hierarchical level of generality a predicate holds but to know of some species of the appropriate genus. Even if there were no other forms of triangles than isosceles triangles, in which case it would be natural to think that it belongs to them as isosceles to have two right angles, it would still be the case that it belongs to triangles as such and not isosceles triangles (*APo* 74a16-17). Incidental knowledge is therefore neither understanding in the sense of knowing *why* nor is it knowing *that* at the proper level of generality. The man who knows that all triangles have two right angles because they are triangles understands why the various triangles have two right angles and he knows why it must be the case that everything that belongs to the genus triangle has two right angles. This does not mean that he knows why triangles as such have two right angles. That again is not because it belongs to some higher genus which explains why it is such. Another kind of explanation is required to account for triangle as such having two right angles, an explanation based on the essence of being a triangle.<sup>79</sup>

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<sup>79</sup> Some scholars think that the *HA* is composed on this model so as to establish at what level of generality the attributes there described hold. Having a heart and a liver, for instance, belongs

The second distinction is formulated thus in *APo* I, 2, 71b33–72a5:

πρότερα δ' ἐστὶ καὶ γνωριμώτερα διχῶς· οὐ γὰρ ταῦτόν πρότερον τῇ φύσει καὶ πρὸς ἡμᾶς πρότερον, οὐδὲ γνωριμώτερον καὶ ἡμῖν γνωριμώτερον. λέγω δὲ πρὸς ἡμᾶς μὲν πρότερα καὶ γνωριμώτερα τὰ ἐγγύτερον τῆς αἰσθήσεως, ἀπλῶς δὲ πρότερα καὶ γνωριμώτερα τὰ πορρώτερον. ἔστι δὲ πορρωτάτω μὲν τὰ καθόλου μάλιστα, ἐγγυτάτω δὲ τὰ καθ' ἕκαστα· καὶ ἀντίκειται ταῦτ' ἀλλήλοις.

On the one extreme is that which is closest to perception and furthest away from generality and on the other extreme is the opposite, what is most general and furthest away from perception. What is prior by nature is that which is furthest away from perception. The only way to what is prior in nature is through what is prior to us. We start with what is closest to perception and proceed to what is closer to nature, and what is closest to perception are the particulars (τὰ καθ' ἕκαστα).

Now I will turn to methodological passages in the biological writings that concern the role of *ἱστορία*. In Aristotle's zoological writings there are, in particular, three passages that underline this: *HA* I, 6, 491a7-14, *PA* II, 1, 646a8-12 and *IA* 704b9-11. The passage in the *IA* puts this most generally:

ὅτι μὲν οὖν οὕτω ταῦτα συμβαίνει, δῆλον ἐκ τῆς ἱστορίας τῆς φυσικῆς, διότι δέ, νῦν σκεπτέον.

Prior to this statement he has listed the questions to be answered in the *IA*, the causes of which must be looked into (τὰς αἰτίας θεωρητέον). That the facts are as there listed is clear from the "natural history". Why the facts are thus

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to all blooded animals. The explanatory works (*PA*, *GA* etc.) then explain why these attributes hold. See in particular Lennox (2000a).

must now be investigated. More or less the same view is stated in more detail in the opening sentences of *PA* II:<sup>80</sup>

ἐκ τίνων μὲν οὖν μορίων καὶ πόσων συνέστηκεν ἕκαστον τῶν ζώων, ἐν ταῖς ἱστορίαις ταῖς περὶ αὐτῶν δεδῆλωται σαφέστερον· δι' ἃς δ' αἰτίας ἕκαστον τοῦτον ἔχει τὸν τρόπον, ἐπισκεπτέον νῦν, χωρίσαντας καθ' αὐτὰ τῶν ἐν ταῖς ἱστορίαις εἰρημένων.

The *ἱστορία* presents the parts each (ἕκαστον) animal is composed of while the *PA* is to look into the αἰτία for these compositions. The egg experiment, for instance, supplies the fact that the heart develops first in blooded animals but it does not say why. The arguments that answer the why question also shows that the heart *must* develop first and in that sense reaches the same conclusion as the observation. But the fact, theoretically at least, comes first.<sup>81</sup> This is again spelled out in the *HA*. After some chapters exemplifying the method to be used in the *HA* Aristotle goes on to say:

ταῦτα μὲν οὖν τοῦτον τὸν τρόπον εἴρηται νῦν ὡς τύπῳ, γεύματος χάριν περὶ ὅσα θεωρητέον (δι' ἀκριβείας δ' ὕστερον ἐροῦμεν) ἵνα πρῶτον τὰς ὑπαρχούσας διαφορὰς καὶ τὰ συμβεβηκότα πᾶσι λάβωμεν. μετὰ δὲ τοῦτο τὰς αἰτίας τούτων πειρατέον εὑρεῖν. οὕτω γὰρ κατὰ φύσιν ἐστὶ ποιεῖσθαι τὴν μέθοδον, ὑπαρχούσης τῆς ἱστορίας τῆς περὶ ἕκαστον· περὶ ᾧν τε γὰρ καὶ ἐξ ᾧν εἶναι δεῖ τὴν ἀπόδειξιν, ἐκ τούτων γίγνεται φανερόν.

This is Aristotle's most programmatic statement of the role of *ἱστορία* in the study of nature. The natural method is to start with the *ἱστορία* of each (περὶ ἕκαστον). First we grasp (λάβωμεν) the differences (διαφορὰς) and the facts

<sup>80</sup> Book I is a general introduction to the study of biology. This is therefore the opening sentence of the *PA* proper.

(συμβεβηκότα) by ἱστορία, then we try to discover the causes (αἰτία).<sup>82</sup> The demonstration (ἀπόδειξις) must be about (περί) and from (ἐκ) the ἱστορία.

In these passages Aristotle explains in general terms the place of ἱστορία in the study of animals. It presents the facts, what the explanations and demonstrations are about. These statements from the *HA*, *PA* and *IA* leave open the nature of the demonstrations intended and I do want to leave the question open whether Aristotle intended the *HA* to provide material for *Analytically* style demonstrations or not.<sup>83</sup> And, importantly, they do not say anything about the nature of the ἱστορία itself, and we must go to the *HA* to find out what that is. They are only concerned with the role of ἱστορία at the explanatory level. It is easy to assume that the references to ἱστορία in these contexts are references to perceptual knowledge, but there is nothing in the texts that presses this interpretation. It is only if we read them in close conjunction to the two distinctions I presented above that this interpretation seems compelling.

The two distinctions discussed above are obviously related and seem also to be related to these methodological passages. The way from perception to understanding is the way from incidental knowledge to knowledge or understanding ἀπλῶς. This process (ἐπαγωγή) is described in the last chapter of *APo*, as well as the first chapter of *Met*. It is not something Aristotle lays any great stress on. He was not particularly worried about the reliability of sense

<sup>81</sup> Cf. the well known passage from the *GA* (760b27ff.) on the lack of observations on the reproduction of bees, which stresses the priority of observations over λόγοι.

<sup>82</sup> In the *HP* VII, xi, 1 Theophrastus expressly links ἱστορία and διαφορά:  
ἀφωρισμένων οὖν τούτων περὶ τὰς διαφορὰς ἐν οἷς γίνονται καὶ πῶς λεκτέον ἤδη  
τὰς καθ' ἑκάστον ἱστορίας ... (The text following this is mutilated, but the very next  
words are: ὅσα μὴ κατὰ τὴν ἰδίαν ἑκάστου φύσιν.)

The issue concerns the time of growth and flowering of herbs, which he has been discussing in general terms, but proceeds to give detailed accounts of individual plants.

<sup>83</sup> See Lloyd (1996) 7-37 for a discussion of how narrowly conceived the project of reading the zoological treatises only with the *APo* model of *apodeixis* in mind, as there are many other models of *apodeixis* in the Aristotelian corpus, and some which are better applicable to zoology than the one found in the *APo*.

perception or about the possibilities of knowledge. He was not arguing against scepticism about knowledge. His agenda in the *APo* is to explain understanding (ἐπιστήμη) in the strict sense of knowing why something *necessarily* is as it is. To be able to do this by the demonstrative method one has in the end to be able to rely on indubitable premises. He denies that they can be somehow innate but, as all knowledge is based on some previous knowledge (clearly stated in the first and last chapters of *APo*), they must be based on something. This something is our capacity (δύναμις) to learn from experience. It all starts in perception (αἴσθησις) and from perception we proceed to the universal by ἐπαγωγή, usually translated as "induction". The classical definition of ἐπαγωγή is in *Top* I, 12, 105a13–14: ἐπαγωγή δὲ ἢ ἀπὸ τῶν καθ' ἕκαστα ἐπὶ τὸ καθόλου ἔφοδος. Out of context this sounds deceptively "Baconian" but in context it is something quite different. Aristotle is discussing dialectical arguments and ἐπαγωγή is one of its cardinal methods, the other being συλλογισμός. A dialectical argument begins in what someone takes to be the case, i.e. in ἔνδοξα. By ἐπαγωγή the opponent uses these particular statements and beliefs of the one he is opposing to posit a general proposition which has to be accepted by the one who has the particular belief. Then it might just be possible for him to deduce from this general proposition something unacceptable to the other part. Thus you win a verbal contest. Ἐπαγωγή in this instance is not based on truths or observed facts but on someone's opinions. This is one extreme of the spectrum of ἐπαγωγή. When discussing it in the *APo*, particularly in the last chapter, it is clear that Aristotle is referring to the road from sense-perception — αἴσθησις — to knowledge of the universal and ultimately knowledge of the indemonstrables. But αἴσθησις, as sense-perception, is not all what we might expect it to be. Not only can the word mean "feeling", "consciousness", "knowledge" etc., which in itself is

important not to forget<sup>84</sup>, but in sense-perception more happens than meets the eye. Even though we perceive (αἰσθάνεται) the individual (τὸ καθ' ἑκάστων) perception (αἴσθησις) is of the general (τοῦ καθόλου) (*APo* 100a16–b1). Even though we perceive the man Critias or any other individual the perception is of *man*. The details of this are not important in the present context<sup>85</sup>, and require a treatise on their own, and it is sufficient to note that the lowest step in ἐπαγωγή is already a universal. There is no reason to believe that Aristotle repeated the egg experiment in order to see if the heart always develops first. A single observation already establishes, *ceteris paribus*, a general truth.

#### 8. Transit.

In the next chapter, my final study, I will explore the "historical" investigations of nature by Aristotle and Theophrastus, carrying on my semi-chronological story. In order to understand the nature of the ἱστορία of Aristotle and, thereby, dig deeper into the concept of ἱστορία, we must see how it is practiced in the *Historia*. The programmatic and methodological passages discussed above only give a very partial picture of what it is about, and that picture is easily misunderstood. Aristotle, and Theophrastus, may theoretically have put their main faith in autopsy and that will show most clearly in methodological discussions. The reality in practice can be quite different.

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<sup>84</sup> Cf. Solmsen (1968), though he notes that αἴσθησις for Aristotle is primarily sense-perception, and Frede (1987a), who argues that αἰσθάνεσθαι means becoming aware of something, by sense-perception or in any other way. Lloyd (1979) 134-138 must also be consulted.

<sup>85</sup> See Spruit (1994) 1-10 and, more specifically on Aristotle, 45-6.



What this chapter has shown again is the great variety of uses of the ἱστορ- vocabulary: it can refer to almost anything used to support a λόγος. But the λόγος is not the same in the cases of Aristotle and the "Hippocratic" author. For Aristotle it is a theory formulated within his teleological mode of explanation. For the author of *Genit/NatPuer/Morb* IV it is what he has been claiming: the facts as he claims they are —his story. The ἱστορία are his proofs. Aristotle's ἱστορίαι are the facts that need to be explained. What these ἱστορίαι are I must now turn to.

## CHAPTER IV

### Nature Investigated

Nature does not come pre-packed and labelled. We need to do the packing and labelling, as well as supply the chunks. The complexity of the job is not the same in all areas, and biology has proved to be one of the most complex. Animals and plants are paradigmatic natural substances, and frequently referred to as such by Aristotle. He himself embarked on a study of animals, while Theophrastus, who may have been instrumental in formulating a project of natural history, concentrated on plants. But there are some very significant differences between the *Historia Animalium* and the *Historia Plantarum*. These have been explained in various ways, but this most often involves a claim to the effect that Theophrastus was less of a philosopher and/or more of a scientist than Aristotle.<sup>1</sup> This is also the case in the more general realm of cosmology and even metaphysics, where it has been claimed that Theophrastus shows more respect for the observed irregularities in nature than Aristotle. This apparent contrast between Aristotle and Theophrastus is my main concern on

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<sup>1</sup> "Theophrastus, however, seems to have preferred physics to metaphysics, initiating a shift of attention fully developed by his successor Strato, nicknamed "the physical philosopher" (ὁ φύσικος)." Baltussen (2000) 11.

the following pages, but the objective is to explore this contrast in order to reveal some essential elements of ἱστορία φυσική, or ἡ περὶ φύσεως ἱστορία. After some general considerations I will first look into Aristotle and Theophrastus on the difference between the sublunary and the superlunary world and what that means for "natural history". Then I turn to their biological writings and the real and apparent differences between their respective *Historiae*.

### 1. Living nature and explanation.

Aristotle's *HA* and Theophrastus' *HP* are the more descriptive parts of their zoological and botanical works.<sup>2</sup> The relation between Theophrastus' botanical studies and his metaphysical and methodological thinking has not been a pressing problem, simply because he is less articulate about his metaphysics and methodology than Aristotle is.<sup>3</sup> But the place of zoology in Aristotle's philosophy has been a central problem in 20<sup>th</sup> century Aristotelian scholarship, leading to a variety of developmental hypotheses<sup>4</sup>, which I will not discuss here. While the zoology has proved a rich source for Aristotle's metaphysical thinking<sup>5</sup> the relation between the zoological works and the *Organon*, in particular the *APo*, is much more ambiguous. Everyone in the debate has to

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<sup>2</sup> Louis (1956) xv overdoes it when he claims that the *HA* is an "œuvre purement descriptive".

<sup>3</sup> This is still an interesting problem, which can be fruitfully explored through Theophrastus' *Metaphysics*. Theophrastean scholarship has been taking off in recent years, in particular since the publication of his collected fragments (FHS&G) in 1992.

<sup>4</sup> E.g. Jaeger, who saw Aristotle's development as being from a Platonist towards a full blooded empirical scientist, with the *HA* as a culmination, and Balme, who presented a more complex picture of the relation between the zoological treatises.

<sup>5</sup> I want in particular to mention Furth (1988). See 67-75 for a justification of his approach to Aristotle's metaphysics.

agree that the zoological works display nothing like the rigid axiomatic structure of demonstration Aristotle's *APo* argues for. Those who want to see a close relation between the two have to show that there is *something significantly like* that structure in the zoology, either actually or potentially. Attempts to do this have not been lacking.<sup>6</sup> James Lennox has, for instance, — on his own admission — spent the last twenty years arguing for a close connection between (a) Aristotle's zoology and his philosophy of zoology (by which he means the *PA I*), and (b) the philosophy of zoology and the general theory of science.<sup>7</sup> He expresses the conviction that there is a link between these realms with the following rhetorical question: "Is it possible that a philosopher as systematic as Aristotle could formulate the first rigorous theory of scientific inquiry and demonstration, pepper the treatise in which he does so with biological examples, and then *not* aim to structure his science of animals in accordance with that theory?"<sup>8</sup> Ignoring, for the sake of the argument, the question begging involved in "systematic", the obvious answer seems to be "no". But even a "no" can be followed by a variety of different accounts of the relation between the "theory of science" and the "science of animals", some of which seem to approximate an affirmative answer to the above question. Aristotle may well have intended to apply the *APo* model to the zoology but failed, given up on the project, simply not have made enough progress or possibly changed it out of recognition. It is even possible that an "*APo* project" was not on the table, however we understand this phrase, when Aristotle embarked on his zoological studies. Putting a finger on Aristotle's intentions is

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<sup>6</sup> E.g. Bolton (1987), Gotthelf (1987), Lennox (2000a).

<sup>7</sup> Lennox (2000) xxii-xxiii, and for the *PA I* as the link between the *APo* and the zoology, Lennox (2000d). It is not clear to me *why* he thinks it is so important to establish this link, though the title of Lennox (2000d), "Putting Philosophy of Science to the Test: the Case of Aristotle's Biology", is an indication.

<sup>8</sup> Lennox (2000) 6.

not easy. The fact remains, as will become clear, that a qualified version of demonstration and definition that fits the zoological material is much more complicated than the axiomatic and linear version we find in the *APo*.

Recent work by David Charles, citing the support of Allan Gotthelf, illustrates this last point.<sup>9</sup> A pressing problem in zoology is identifying, and defining, biological kinds. This was, of course, not only a problem for Aristotle and Theophrastus, but has been, and still is, a central problem in biology. How do Aristotle's definitions of biological kinds square with his theory of definitions in the *APo*? According to Charles, Aristotle developed "*one*, explanation-involving, account of definition", which rests on two claims: "(A) At the centre of each definition there is reference to one causally basic feature which explains the presence of other necessary features of the phenomena. (B) The definition is completed by the addition of reference to differentiating features, themselves parts of the nature of the phenomenon, whose presence is explained by the basic causal feature specified in (A)."<sup>10</sup> Charles takes as an example Aristotle's discussion of fish in *PA* IV, 13.<sup>11</sup> Though many aspects of the nature of fish can be explained by reference to their mode of movement<sup>12</sup>, their mode of reproduction, style of eating as well as the differences between species can not be explained with reference to this.<sup>13</sup> Charles concludes: "There is, it appears, a crisis in Aristotle's project. In biology, his favoured area of investigation, he failed to find the one, unitary, causal feature whose (postulated) existence provides the basis of his account of definition in the *Analytics* and the *Metaphysics*. Are we, at this point, witnesses

<sup>9</sup> Charles (1997) and (2000) referring to Gotthelf (1997). See also Lennox (2000d) and Detel (1997).

<sup>10</sup> Charles (2000) 310.

<sup>11</sup> Charles (1985), (1997) and (2000) 310-347. He refers to Gotthelf (1997), for a discussion of another example with a conclusion similar to his own.

<sup>12</sup> For this as the causally basic feature of fish, see Charles (2000) 332-3.

to the collapse of a brilliant research program?"<sup>14</sup> Charles' answer is a qualified negative. But the version of the causal model of definition he comes up with is a radical new version of the *APo* model. Instead of one basic causal feature, there are many causal features, some of them material, that interact in the explanatory definition, *without there being any one basic causal feature linking them all*. Charles terms the resulting unity, and there has to be some sort of unity in a definition, "interactive unity".<sup>15</sup>

Whether it is possible to accommodate this to the *APo* account of definition and demonstration, via the *PA I* or not<sup>16</sup>, is not an issue here. The important point to see is that definitions and demonstrations in the zoological works are much more complicated than the theories of the *APo* make room for. Even unifiers like Lennox and Gotthelf admit that the *APo* model has to be qualified if it is to work in the realm of animals, and the qualification is in the direction of increased complexity, i.e. less unity. This is surely related to the subject matter of zoology, and biology in general. Nature, to take an even wider category, is a complex phenomenon and does not easily submit itself to abstract theories. It is obviously "mixed up" (συνγχεῖν), as Aristotle says (*Ph I*, 1, 184a21-2).<sup>17</sup> Much modern philosophy of science insists on the complexity

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<sup>13</sup> Cf. Charles (2000) 335.

<sup>14</sup> Charles (2000) 336. See Lennox (2000e) for a defense of the idea that Aristotle had a "research program", which no one after him and Theophrastus tried to implement.

<sup>15</sup> Charles (2000) 345: "The resulting unity might be termed *interactive unity*, because it rests on the distinctive interconnection of several causal features, and not on the presence of one common cause or starting point. Biological natures, so understood, will not conform to the *Analytics* ideal, but neither will they be the result solely of common sense reflection." Cf. Charles (1997) 42. The space between the two alternatives Charles mentions in the last sentence of this paragraph is very wide.

<sup>16</sup> That this is the route to take is argued most forcefully by Lennox (2000d).

<sup>17</sup> Furth (1988) 71-75, gives a list of seven "facts of nature" that characterise the biological *phainomena* Aristotle was dealing with. His emphases are complexities, on the one hand, and high degree of order, on the other (cf. "Fact 3. *These biological individuals are by a wide margin and without exception the most complex and highly organized objects to be found on the Earth*").

of nature in the face of scientific theories. Nicholas Rescher, to take a recent example, has pressed this point. He argues that there is a direct correspondence between how hard we push nature with our "tools" and the yield we get. The resulting "laws of nature" are true of nature at the level of sophistication at which these tools apply.<sup>18</sup> "Aristotle's cosmos had only spheres; Ptolemy's added epicycles; ours has a virtually endless proliferation of complex orbits that only supercomputers can approximate."<sup>19</sup> The harder we push, the more we get. The result of the intense pushing in biology in the last hundred or so years is that the "volume of our information of the housefly is greater than Aristotle's about the whole of the animal kingdom."<sup>20</sup> But the complexity increases at the same time, and this is the point I want to take away from this initial discussion — to Aristotle and Theophrastus. Theophrastus studies a different realm of being in his botany than Aristotle in his zoology. Plants are lower level beings than animals. As such, according to the hierarchical model of the universe Aristotle and Theophrastus accepted<sup>21</sup>, they are more irregular or less determined than animals. Not only is he carrying on, in the sense of carrying further, a particular approach to a part of nature (more on this later), he is also doing it in a different realm of nature. By comparing Aristotle's and Theophrastus' *Historiae* I hope to throw light on what this means for an enquiry into the physical world which starts with and tries to save the *phainomena*. Are the classificatory and explanatory schemes they come up with in the case of animals and plants a result of their pushing nature harder than the *APo* theory can cope with?

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<sup>18</sup> Rescher (2000) 69. Rescher disagrees with Cartwright (1983) on this point. According to Rescher the laws are not relative to levels of reality but to levels of technology. His kind of realism, "contextualistic realism" (71), is contextual to this.

<sup>19</sup> Rescher (2000) 9-10. Progress in science is possible, according to Rescher, but only "advancement-progress" not "destination-progress", i.e. there is no teleology involved (49-50).

<sup>20</sup> Rescher (2000) 22 (emphasis mine).



The first part of this chapter deals with what Aristotle and Theophrastus have to say about the general question of natural history. Animals and plants are a part of nature, φύσις, and are studied as such. It is therefore important to see what Aristotle and Theophrastus think about ἡ περὶ φύσεως ἱστορία or ἱστορία φυσική in general before I go on, in part II, to discuss the narrower field of ἡ περὶ τῶν ζώων /φυτῶν ἱστορία.

## PART I

### 2. *Ἱστορία and ἐπιστήμη of nature.*

Aristotle begins *PA* I by insisting on methodological standards for ἡ περὶ φύσεως ἱστορία (639a13).<sup>22</sup> He goes on to ask a series of questions about how to proceed in the study of *animals*, the first being the question whether each particular animal should be studied on its own<sup>23</sup> or by the common attributes, like sleep, respiration, growth, deterioration and death. He eventually settles on this latter procedure. Later in the chapter he refers to the person doing this as a φυσικός (639b8).<sup>24</sup> The study of animals (and plants, cf. 644b28-30; cf. *Met* VII, 8) is therefore presented within the framework of the study of nature. *PA* I can be read as Aristotle's general introduction to the study of animals, which is a limited area within the general study of nature, which again is a theoretical

<sup>21</sup> See for instance *Cael* III 2, 300b25 ff., *GA* II, 1 and *Thphr Metaph* passim.

<sup>22</sup> 639a12-15: ὥστε δῆλον ὅτι καὶ τῆς περὶ φύσιν ἱστορίας δεῖ τινὰς ὑπάρχει ὄρους τοιοῦτους πρὸς οὓς ἀναφέρων ἀποδέχεται τὸν τρόπον τῶν δεικνυμένων, χωρὶς τοῦ πῶς ἔχει τάληθές, εἴτε οὕτως εἴτε ἄλλως.

<sup>23</sup> Which would approach what we understand with "natural history" today.

<sup>24</sup> Cf. also *IA* 1, 704b9-11: ὅτι μὲν οὖν οὕτω ταῦτα συμβαίνει, δῆλον ἐκ τῆς ἱστορίας τῆς φυσικῆς, διότι δέ, νῦν σκεπτέον, which seems to be a reference to the *HA*.

and not a practical science.<sup>25</sup> In chapter 5 Aristotle presents his justifiably famous apology for why animals and plants should be studied, comparing them as objects of enquiry to ungenerated and imperishable things, i.e. the heavenly bodies or the superlunary region. *They* are more worthy objects of study — indeed divine (τιμίαι and θείαι; cf. *Cael* I, 3; II, 1; *Met* XII, 8, 1074a38-b14) — compared with the humble objects of zoology, and as such give more pleasure (ἡδιον). But studying animals yields more knowledge because they can be studied in detail (cf. δι' ἀκρίβειας in 644b35-645a1) as we live among them (τὸ σύντροφον). There is thus a clear understanding that the study of animals and plants is a study of less worthy things, but they supplement this by providing an excess of knowledge (ἡ τῆς ἐπιστήμης ὑπεροχή), which we must understand in terms of the amount of information or volume of *phainomena*. The dichotomy between more exact knowledge and the knowledge of worthy things is repeated at the start of *de Anima* I. 'Ἡ περὶ τῆς ψυχῆς ἱστορία is valuable *both* because the object studied is good and remarkable *and* because of the exactness the inquiry allows, remembering that ψυχὴ is the form of the living material body and belongs, therefore, to the study of nature.<sup>26</sup>

<sup>25</sup> In *Met* VI, 1 he argues that the study of nature is a theoretical science, distinguishing it from mathematics by his argument about the "snub" (τὸ σιμόν) and the "concave" (ἡ κοιλότης): διαφέρει δὲ ταῦτα ὅτι τὸ μὲν σιμόν συνειλημμένον ἐστὶ μετὰ τῆς ὕλης (ἔστι γὰρ τὸ σιμόν κοίλη ρίς), ἡ δὲ κοιλότης ἄνευ ὕλης αἰσθητῆς (1025b32-34). The study of nature is theoretical, but its object of study is of the snub kind: it essentially involves perceptible matter. See also Düring (1961) ad loc. *PA* I, 639b30-640a2, who argues that the contrast in this passage is not between the theoretical sciences and the physical sciences, but between the latter and the practical sciences. Pellegrin (1986) 13: "To be sure, Aristotle placed zoology in a larger frame constructed from metaphysical principles ultimately related to those of Plato: the study of animals is part of physics; it is a theoretical science (in the sense of *episteme*) of the real in becoming." In contrast, the main distinction in Theophrastus' *CP* is between nature and art, both of which are essential to his enquiry.

<sup>26</sup> τῶν καλῶν καὶ τιμίων τὴν εἶδῃσιν ὑπολαμβάνοντες, μᾶλλον δ' ἐτέραν ἐτέρας ἢ κατ' ἀκρίβειαν ἢ τῷ βελτιόνων τε καὶ θαυμασιωτέρων εἶναι, δι' ἀμφοτέρα ταῦτα τὴν περὶ τῆς ψυχῆς ἱστορίαν εὐλόγως ἂν ἐν πρώτοις τιθέημεν. Ross (1961) 165 does not understand why Aristotle "assigns a high degree of ἀκρίβεια to psychology", and hesitantly

So how does Aristotle approach the enquiry into heavenly things?

*Cael* I opens with these words:

ἡ περὶ φύσεως ἐπιστήμη σχεδὸν ἡ πλείστη φαίνεται περὶ τε σώματα  
καὶ μεγέθη καὶ τὰ τούτων οὔσα πάθη καὶ τὰς κινήσεις, ἔτι δὲ περὶ  
τὰς ἀρχάς, ὅσαι τῆς τοιαύτης οὐσίας εἰσὶν· κτλ.

The precise argument for the centrality of bodies is not important. It is enough to note that φύσις refers primarily to bodies and that the study of φύσις is, therefore, primarily a study of bodies and their attributes. Aristotle frequently repeats that φύσις is that which has the source of movement within itself.<sup>27</sup> This is essential in the argument starting in *Cael* I, 2, that all natural bodies can move, because nature is a principle of movement (268b14-16). The simple bodies have simple natural movements, of which there are only two: in a straight line and in a circle (268b26-269a9). It turns out that in the sublunary region the natural movement is in a straight line, while in the superlunary region it is in a circle. The distinction between these two regions is, at least in

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agrees with Philoponus that this is because "soul is a pure form, not a complex for form and matter." The reason must be that precisely because soul can be studied in ensouled bodies, animals and plants, can we have exact knowledge of it. See e.g. Lloyd (1996) ch. 2, particularly 39. Irwin (1989) 489 n 8, who distinguishes sharply — too sharply (see e.g. Lloyd (2000a) 229) — between empirical inquiry, which he identifies with ἱστορία, and dialectical inquiry, argues that this phrase does not refer to the *de An*, because the *de An* is dialectical and not empirical.

<sup>27</sup> He sums up his discussion of φύσις in the "philosophical dictionary" in *Met* V, 4, 1015a13-15: ἐκ δὲ τῶν εἰρημένων ἡ πρώτη φύσις καὶ κυρίως λεγομένη ἐστὶν ἡ οὐσία ἡ τῶν ἐχόντων ἀρχὴν κινήσεως ἐν αὐτοῖς ἢ αὐτά . Cf. also *Met* VI, 1025b19-21 and 1036b28-30: αἰσθητὸν γὰρ τι τὸ ζῶον, καὶ ἄνευ κινήσεως οὐκ ἔστιν ὀρίσασθαι, διὸ οὐδ' ἄνευ τῶν μερῶν ἐχόντων πῶς (on this controversial passage see Frede (1990b), Lloyd (1996) 53-4 and n 53, Charles (2000) 276-83. *Ph* III opens with one of his strongest formulations of the view that without knowledge of movement there is no knowledge of nature: ἐπεὶ δ' ἡ φύσις μὲν ἐστὶν ἀρχὴ κινήσεως καὶ μεταβολῆς, ἡ δὲ μέθοδος ἡμῖν περὶ φύσεως ἐστὶ, δεῖ μὴ λανθάνειν τί ἐστὶ κίνησις· ἀναγκαῖον γὰρ ἀγνοουμένης αὐτῆς ἀγνοεῖσθαι καὶ τὴν φύσιν. See Solmsen (1960) 253-265 for the importance of movement in Aristotle's cosmology and physics in contrast to Plato's insistence on generation.

theory,<sup>28</sup> very sharp: *aither*, the fifth element, belongs to the superlunary region, while the four common elements, earth, water, air and fire, belong to the sublunary region. The importance of this passage, for my purpose, when compared to the opening of *Cael* III, is the phrase ἡ περὶ φύσεως ἐπιστήμη as an introduction to *Cael* I.

The opening of *Cael* III is in many ways similar to the opening of *Cael* I. Here the argument for why φύσις is primarily concerned with bodies is repeated, followed by this remark (298b1-4):

φανερὸν ὅτι τὴν πλείστην συμβαίνει τῆς περὶ φύσεως ἱστορίας περὶ σωμάτων εἶναι· πᾶσαι γὰρ αἱ φυσικαὶ οὐσίαι ἢ σώματα ἢ μετὰ σωμάτων γίνονται καὶ μεγεθῶν.

*Cael* I and II concentrate on the superlunary region and the cosmos as a whole. *Cael* III and IV turn to the sublunary region of destruction and generation (298b8).<sup>29</sup> It is in introducing this discussion that Aristotle writes about ἡ περὶ φύσεως ἱστορία, and not the more general ἡ περὶ φύσεως ἐπιστήμη he used at the start of book I.<sup>30</sup> He has moved from the level of the ungenerated and indestructible to the level of generation and destruction, cf. 298b6-11:

περὶ μὲν οὖν τοῦ πρώτου τῶν στοιχείων εἴρηται, καὶ ποῖόν τι τὴν φύσιν, καὶ ὅτι ἄφθαρτον καὶ ἀγέννητον· λοιπὸν δὲ περὶ τοῖν δυοῖν

<sup>28</sup> See Lloyd (1996) 160-183 and (2000b), particularly 246-7, on how Aristotle tried to bring any irregular phenomena of the heavens — e.g. comets — to, or at least towards, the sublunary region, and thus save the regularity of the superlunary region.

<sup>29</sup> There are strong arguments in favour of *Cael* III and IV being older than books I and II, particularly the fact that books III and IV are completely silent about the fifth element — with the exception of the introductory section. If we accept this it means that the introduction to III and IV is written later than the main text itself, i.e. after books I and II. But I see no reason to doubt that the introduction is by Aristotle himself, as Elders (1966) 271 n 1 does.

<sup>30</sup> Cf. *Ph* I, 1, 184a14-16.

εἰπεῖν.<sup>31</sup> ἅμα δὲ συμβήσεται περὶ τούτων λέγουσι καὶ περὶ γενέσεως καὶ φθορᾶς διασκέπασθαι· γένεσις γὰρ ἦτοι τὸ παράπαν οὐκ ἔστιν, ἢ μόνον ἐν τούτοις τοῖς στοιχείοις καὶ τοῖς ἐκ τούτων ἐστίν.

The distinction presented here is similar to the one we see at the beginning of *PA I*, 5 between that which suffers generation and destruction and that which does not.<sup>32</sup> The use of *ιστορία* in *PA I*, 5, *de An I*, 1 and *Cael III*, 1 suggests strongly that the variety of phrasing in *Cael I*, 1 and *III*, 1 is related to the subject matter: i.e. the sublunary region of generation and destruction. The immediate continuation of *Cael III*, 1 points in the same direction (298b11-24):

αὐτὸ δὲ τοῦτο πρῶτον ἴσως θεωρητέον, πότερον ἔστιν ἢ οὐκ ἔστιν. οἱ μὲν οὖν πρότερον φιλοσοφήσαντες περὶ τῆς ἀληθείας καὶ πρὸς οὓς νῦν λέγομεν ἡμεῖς λόγους καὶ πρὸς ἀλλήλους διηνέχθησαν. οἱ μὲν γὰρ αὐτῶν ὅλως ἀνείλον γενέσιν καὶ φθοράν· οὐθὲν γὰρ οὔτε γίγνεσθαι φασιν οὔτε φθείρεσθαι τῶν ὄντων, ἀλλὰ μόνον δοκεῖν ἡμῖν, οἷον οἱ περὶ Μέλισσόν τε καὶ Παρμενίδην, οὓς, εἰ καὶ τᾶλλα λέγουσι καλῶς, ἀλλ' οὐ φυσικῶς γε δεῖ νομίσαι λέγειν· τὸ γὰρ εἶναι ἅττα τῶν ὄντων ἀγένητα καὶ ὅλως ἀκίνητα μᾶλλον ἐστίν· ἑτέρας καὶ προτέρας ἢ τῆς φυσικῆς σκέψεως. ἐκεῖνοι δὲ διὰ τὸ μηθὲν μὲν ἄλλο παρὰ τὴν τῶν αἰσθητῶν οὐσίαν ὑπολαμβάνειν εἶναι, τοιαύτας δὲ τινὰς νοῆσαι πρῶτοι φύσεις, εἴπερ ἔσται τις γνώσις ἢ φρόνησις, οὕτω μετήνεγκαν ἐπὶ ταῦτα τοὺς ἐκεῖθεν λόγους.<sup>33</sup>

Aristotle often refers to the arguments of the Eleatics as not belonging to the study of nature.<sup>34</sup> Their failure was in not recognising *where* their arguments

<sup>31</sup> "Two" from the perspective of their mode of movement, i.e. in a straight line either towards or away from the middle. Aristotle has problems explaining why there are four sublunary elements and not two.

<sup>32</sup> Cf. the beginning of *Ph II*, where animals, plants and the four simple bodies are mentioned, in this order, as paradigmatic natural beings.

<sup>33</sup> This is followed by ἕτεροι δέ, which picks up οἱ μὲν γάρ.

<sup>34</sup> E.g. *Ph I*, 2, 184b25-185a1. Cf. also 184b15-18 where Melissus and Parmenides are referred to for the view that the one principle is motionless, and then contrasted with οἱ φυσικοί, who claimed that it was in motion. What allows him to classify some earlier thinkers as φυσικοί

hold, because the only beings they recognised were perceptible beings.<sup>35</sup> He accepts that there has to be something ungenerated and indestructible if there is to be any γνῶσις and φρόνησις. But it is not a feature of nature and does not belong to the enquiry into nature. Applying the Eleatic arguments to (physical) nature is a category mistake. Even though they were on to a right principle, they were ignorant about nature.<sup>36</sup>

If a report by Simplicius is to be believed Theophrastus went even further in his criticism of the use of the Eleatics (Simp *in Ph*: CAG IX 22.22 f. = FHS&G 224). The question concerns whether the principle of nature is single or not, and, if it is single, whether it is moved or unmoved, and, if it is unmoved, whether it is unlimited, like Melissus held, or limited, like Parmenides says, οὐ περὶ φυσικοῦ στοιχείου λέγοντες οὗτοι, ἀλλὰ περὶ τοῦ ὄντος ὅλως.<sup>37</sup>

μίαν δὲ τὴν ἀρχὴν ἦτοι ἓν τὸ ὄν καὶ πᾶν καὶ οὔτε πεπερασμένον οὔτε ἄπειρον οὔτε κινούμενον οὔτε ἡρεμοῦν Ξενοφάνην τὸν Κολοφώνιον τὸν Παρμενίδου διδάσκαλον ὑποτίθεσθαι φησιν ὁ Θεόφραστος ὁμολογῶν ἑτέρας εἶναι μᾶλλον ἢ τῆς περὶ φύσεως ἱστορίας τὴν μνήμην τῆς τούτου δόξης.

The implication of this remark is that arguments about being in general do not, according to Theophrastus, belong to ἡ περὶ φύσεως ἱστορία, and it is not

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seems to be the fact that they attribute movement to nature. Elsewhere Aristotle seeks to drive a wedge between Parmenides and Melissus, e.g. *Met* 986b18, 27ff.

<sup>35</sup> A materialist interpretation of the Eleatics' One is implied in Aristotle's attempt, in *Met* I, 984a27ff, to establish a relation between the Eleatics and the material monism of the early Ionians.

<sup>36</sup> This passage is remarkably ignored in the scholarly literature on Parmenides. But see Cherniss (1935) 23 n 85 and 63 n 258 for some interesting comments.

<sup>37</sup> According to Plato's *Phaedrus* Hippocrates wanted to know ἡ τοῦ ὅλου φύσις (270c-d). All attempts to identify genuine Hippocratic works based on Plato's description of Hippocrates have failed. The description need be no more than a Platonic spin on the famous doctor. The Hippocratic *NatHom* opens with an attack on those who go further than medicine requires in their theories about the nature of man, cf. also *VM* 20.



unlikely that the phrase goes back to him. If Xenophanes' opinions do not belong to it, neither do Melissus' or Parmenides'. Is this just a repetition of Aristotle's criticism of the Eleatics, i.e. is Theophrastus just agreeing (ὁμολογῶν) with Aristotle on this point? The nature of the report makes it difficult to draw a definitive conclusion. But we must note that it is not the arguments of the Eleatics as such that seem to be the focus of Theophrastus' criticism. It is the μνήμη of them in the context of ἡ περὶ φύσεως ἱστορία that is considered wrong. This could, therefore, be a criticism of Aristotle, who repeatedly "remembers" the Eleatics only to claim that they are irrelevant in the context in which they are mentioned. But Theophrastus could also be admitting, in the context of his own practice, that the opinions of the Eleatics and Xenophanes are not really relevant in the context. Simplicius would not be interested in distinguishing these issues, as he wants to assimilate Aristotle to the Platonic view that φυσιολογία is εἰκοτολογία (CAG IX 18.29 f. = FHS&G 142).<sup>38</sup> He enlists Theophrastus in support of the view that this is all we are capable of, i.e. in support of his attempted assimilation.<sup>39</sup>

<sup>38</sup> This implies, according to Simplicius, that the *APo* model of demonstration does not apply in the domain of nature.

<sup>39</sup> The text reads: καὶ καλῶς ὁ Πλάτων τὴν φυσιολογίαν εἰκοτολογίαν ἔλεγεν εἶναι, ᾧ καὶ Ἀριστοτέλης συμμαρτυρεῖ τὴν κυρίως ἀπόδειξιν ἐχ' ἀμέσων καὶ αὐτοπίστων ἀρχῶν καὶ ἐκ τῶν κυρίως αἰτίων καὶ τῇ φύσει προτέρων εἶναι βουλόμενος. ἀλλ' οὐκ ἀτιμαστέον διὰ τοῦτο φυσιολογίαν, ἀλλ' ἀρκεῖσθαι χρὴ τῷ κατὰ τὴν ἡμετέραν φύσιν καὶ δύναμιν, ὡς καὶ Θεοφράστῳ δοκεῖ. See Laks (1998) 165-7, who notes that Simplicius frequently ends a comment by referring to Theophrastus as an authority on Aristotle. See also Lloyd (1987) 154-5 n 179 for some reservations on the "defeatism" of Theophrastus.



### 3. *On the eternity of the world.*

Is the world eternal or not? Aristotle discusses the issue in *Cael* I, 10-12, reviewing what other thinkers had said on the topic and constructing his own arguments, in the words of a recent study, "completely through logical and conceptual analysis"; "opponents are attacked for logical inconsistency."<sup>40</sup> I will not object to this selective description of Aristotle's procedure in *Cael* I, 10-12, but the characterisation of Theophrastus' contrasted position is more seriously misleading: "But in marked contrast, the arguments that were selected by and appealed to Theophrastus for *selection*, and so also the arguments (which is perhaps even more important) by which they were countered, depend on *observation* of geological, geographical and meteorological phenomena with empirical appeal of instance, not on metaphysical argument."<sup>41</sup> The Theophrastean text in question is Philo's *De aeternitate mundi* 117-149 (FHS&G 184).<sup>42</sup> I will start by briefly summarising it.

<sup>40</sup> Kidd (1996) 143. He has much the same to say on Theophrastus' *Meteorology* in comparison with Aristotle's *Meteorology*, in Kidd (1992). Solmsen (1960) 274 expresses a similar view in chapters 11-12.

<sup>41</sup> Kidd (1996) 143 (emphases mine). Sedley (1998b) 166 n 1 finds himself in "complete agreement with his conclusions", while I find myself largely in agreement with Sedley's conclusions but not Kidd's.

<sup>42</sup> The text is reported by Philo and no one, as far as I know, has ever claimed that the whole of it is in Theophrastus' own words. But there is still a wide scope for how much of it can be ascribed to him. For a review of the variety of opinions about how much of the text goes back to Theophrastus, and for the possible sources of the four arguments, see Sharples (1998) 132-136. On the one extreme (e.g. von Arnim) only the first few lines, quoted below, belong to Theophrastus while on the other (e.g. Sedley) the whole belongs to Theophrastus, though not in the exact form in which it is reported in Philo. I discuss this briefly below. For a compelling defence of the Philonian authorship of *Aet* see Runia (1981). See also Mansfeld (1992) for the

This is how it starts, as reported by Philo (117):<sup>43</sup>

Θεόφραστος μέντοι φησὶ τοὺς γένεσιν καὶ φθορὰν τοῦ κόσμου  
κατηγοροῦντας ὑπὸ τεττάρων ἀπατηθῆναι τῶν μεγίστων, γῆς  
ἀνωμαλίας, θαλάττης ἀναχωρήσεως, ἐκάστου τῶν τοῦ ὅλου μερῶν  
διαλύσεως, χερσαίων φθορᾶς κατὰ γένη ζώων. κατασκευάζει <sup>44</sup> δὲ τὸ μὲν  
πρῶτον οὕτως·

These four major considerations are then discussed, followed by a refutation of each. I will summarise each argument in turn (I.a, II.a, III.a and IV.a), followed in each case by the refutation (I.b, II.b, III.b and IV.b).

I.a: The first argument is based on the power of water to break down stone and the observation that there are still mountains and hills around. Rain, particularly torrential rain, would, given eternity, have completely flattened out everything. The fact that there are still mountains proves that there was a beginning of the land (ἡ γῆ). This is followed by a short statement about the power of water. By force (βίᾳ) it can push things out of the way, which also applies to drops hollowing out stone.

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view that Theophrastus' doxography contained both arguments and counter-arguments, that it was φυσικαὶ δόξαι and not φυσικῶν δόξαι.

<sup>43</sup> I refer to the text of FHS&G 184 according to the traditional division of chapters in Philo, which are also used in FHS&G.

<sup>44</sup> Mss. Usener changed this to κατασκευάζειν (κατασκευάζουσι has also been suggested), thus making it dependent on the φησί. Most editors and commentators have accepted this, but there is no compelling need to do so. The apparent problem is that the following arguments are not supposed to be Theophrastus' own, but his report of his opponents' arguments. Keeping the mss. reading, Philo is reporting how Theophrastus proved the arguments, κατασκευάζει immediately referring to the first argument Theophrastus is supposed to have *refuted*. The difference is significant. Either Philo is reporting Theophrastus as saying that they, i.e. his opponents, proved their arguments in the following way, or he is reporting that Theophrastus proved the arguments in the way Philo reports them. The mss. reading seems to commit Philo to greater fidelity towards Theophrastus. But more important is what this means for the nature of the debate Philo is reporting. Is Theophrastus responding to already existing arguments for the destructibility of the cosmos or is he himself constructing and proving these arguments, using other people's opinions, in his dialectical opposition to them?

I.b: The answer compares mountains to trees. "Others will come and say that the nature of mountains is no different from trees." Bits fall off and bits grow again. In the case of mountains this happens very slowly. He is, therefore, not talking about eruptions, though the geological account that follows is probably influenced by the phenomena of eruptions. The error of those who claim that mountains would have been completely flattened out is their ignorance of geology, which is not a new science but the ancient wisdom of wise men (*ἀλλὰ παλαιὰ σοφῶν ἀνδρῶν* 134). Mountains grow when the fiery element in the earth (*ἡ γῆ*) is brought upwards by its natural force as it goes to its proper place (*πρὸς τὴν οἰκείαν ... χώραν*), bringing loads of earthy substance (*πολλὴν τῆς γεώδους οὐσίας* 135). The violent conflict and eventual mixture of these two elements makes the "growths" so strong that they are almost waterproof, i.e. strong enough to withstand the power of water.

The counterargument seems, therefore, to be twofold, each part addressing different aspects of the argument against eternity. 1: mountains grow, just like trees. 2: what grows in this way is so strong that it sufficiently withstands the power of water, such that the very slow growth of mountains is not outpaced by the erosive effects of torrential rain. 1 attacks the selective use of the evidence, while 2 more specifically claims that there is a form of stone that is not easily destroyed by water, and thus guarantees the continued existence of this element.

II.a: The example of the islands Rhodes and Delos shows that the sea is already retreating. They were in ancient times below the sea but gradually emerged. This is revealed by the "recorded histories of these [islands]" (*αἱ περὶ αὐτῶν ἀναγραφεῖσαι μνηύουσιν ἱστορίαι* 120). Pindar (78 Bowra) is quoted for

support. In addition there is evidence that what is now fertile land used to be below the sea. Pebbles and shells and suchlike found in fertile soil are an indication of this. Then there is a curious twist to the argument.<sup>45</sup> So far it seems to be more or less to the same effect as argument one. If the sea is retreating, given eternity, there should be nothing left. But instead of arguing this point it claims that if the sea is diminishing the earth should also be diminishing and air as well, until nothing is left but fire.<sup>46</sup>

II.b: In the reply Theophrastus admits the evidence about Rhodes and Delos, but insists that other islands should be considered as well. His counter-example is the ἀδομένη ἱστορία (139) about the Sicilian strait. Sicily used to be connected to the mainland, i.e. it was not an island, but the sea, helped by the winds, flooded and broke the land in between. A written ἱστορία is answered with a celebrated ἱστορία about the formation of an island. In this case, also, the sea is responsible for the formation of an island, but without retreating. There is also a story (λόγος) about many cities that were swallowed by the sea. A piece of poetry is quoted in support of this, about the Peloponnesian towns Aigeira, Bura and Heliceia. Poetry is answered with poetry. The final bit of evidence is the story of Atlantis from Plato's *Timaeus*. The stories about Delos and Rhodes can, therefore, not be used to base an argument for the destructibility of the cosmos on.<sup>47</sup> The reply ends on a methodological note,

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<sup>45</sup> Sometimes thought to indicate that this part is a later addition. Kidd (1996) 140 thinks this "fearful confusion between geographical/meteorological phenomena, elements and principles" is a Stoic intrusion.

<sup>46</sup> The answer to the first argument relies to some degree on the overwhelming power of fire, as it is the combination of fire with earth that makes the super strong stones. The observation that the sea was withdrawing is stated in Aristotle's *Mete* I, 14 and Theophrastus' *Metaph* 10a28-9. Cf. also *Cael* III, 6: ὁρῶμεν γὰρ καὶ πῦρ καὶ ὕδωρ καὶ ἕκαστον τῶν ἀπλῶν σωμάτων διαλυόμενον.

<sup>47</sup> Kidd (1996) 140 claims that the counter-arguments are "based purely on geographical observation of sea encroachment". This is stretching the term "observation" pretty far.

comparing this debate to a debate in a law-court. The law-abiding judge will only declare his decision when he has heard both sides of an argument.

III.a: This one starts with an argument (124). "That thing completely perishes, of which all the parts are perishable; all the parts of the cosmos are perishable; therefore the cosmos is perishable."<sup>48</sup> It is then shown that all the four elements are perishable. The strongest stones smoulder; water that does not receive any wind gets mortified — evidence: bad smell from stale water, like from a rotting animal; it is the nature of air to decay and in some way to die (τρόπον τινα ἀποθνήσκειν 126) — evidence: what is plague if not dead air; fire depends on something to feed it and is therefore obviously perishable — no evidence, but a longish story about the kamikaze snakes of India is told. The conclusion is that the cosmos is not imperishable (ἄφθαρτος 129).

III.b: The reply attacks the argument. Only if all the parts disappear simultaneously is the thing composed of them perishable. But if each of the parts changes into a neighbouring part when it perishes, the opposite conclusion must be stated. Support is sought in the "philosophising of the tragedian", Euripides (fr. 839.12-14), and not in Aristotle (e.g. *GC* 337a1ff).<sup>49</sup>

IV.a: If the cosmos were eternal, the living creatures — and especially man — would also be eternal. But that the origin of man is recent is clear to those who

<sup>48</sup> Φθείρεται πάντως ἐκείνο, οὗ πάντα τὰ μέρη φθαρτά ἐστι, τοῦ δὲ κόσμου πάντα τὰ μέρη φθαρτά ἐστι, φθαρτὸς ἄρα ὁ κόσμος ἐστίν.

<sup>49</sup> This might well be a Philonian insertion, as Philo has quoted this fragment twice already (*Aet* 5 and 30). But it might also be indicative of the nature of the debate Philo is reporting. It would, we assume, have been easy for Theophrastus to refer to Aristotle. But if this is a debate in the context of Aristotelian cosmology and metaphysics it is important to seek evidence outside that philosophy itself. Euripides is just as good as anyone else. Philo might even have found this piece of poetry in Theophrastus.

want to inquire into natural matters.<sup>50</sup> Man cannot live without the τέχνηαι and the τέχνηαι are young. There is a lacuna in the text where the evidence for the age of the τέχνηαι is presented. The conclusion is that because man is not eternal, the other living creatures can not be; and because they are not, the places where they live, earth, water and air, can not be eternal either. Therefore, the cosmos is perishable. The argument rests on the recent origin of man, and we might have expected just the general conclusion that this is evidence for the recent birth of the whole cosmos. But the conclusion we get is much more specific and focused on the age of the elements. This is very important as it supports a unified reading of the four arguments (see below).

IV.b: The argument is dismissed out of hand as foolish, as it would lead to the conclusion that the cosmos is no more than 1000 years old.<sup>51</sup> This then leads into a methodological criticism, which concerns the premise of the argument, i.e. the equal age of the τέχνηαι and mankind (146):

εἰ δὲ δὴ καὶ λεκτέον τὰς τέχνας ἰσηλικὰς ἀνθρώπων γένει, μεθ'  
ἱστορίας φυσικῆς ἀλλ' οὐκ ἀπερισκέπτως καὶ ῥαθύμως λεκτέον. ἢ δ'  
ἱστορία τίς; φθοραὶ τῶν κατὰ γῆν, οὐκ ἀθρόων ἀπάντων ἀλλὰ τῶν  
πλείστων, δυσὶ ταῖς μεγίσταις αἰτίαις ἀνατίθενται, πυρὸς καὶ ὕδατος  
ἀλέκτοισι φοραῖς· κατασκήπτειν δ' ἑκατέραν ἐν μέρει φασὶν ἐν πάνυ  
μακρᾷς ἐνιαυτῶν περιόδοις.

Proper natural history supports the eternity of the cosmos, but still explaining the recent origin of the crafts. Onslaught of fire causes death to those who live on mountains and hills while onslaught of water kills those who live in the

<sup>50</sup> τοῖς βουλομένοις ἐρευνᾶν τὰ φύσεως (130).

<sup>51</sup> This has been used as evidence that the contents of the text go back to Theophrastus, as Philo would have had to use a larger number. See Sedley (1998b) 170 n 16.

lower regions.<sup>52</sup> As they happen in turn in a long cycle only part of mankind is killed each time. This is a large enough proportion for the τέχναι to collapse. When the population starts growing again the τέχναι begin to flourish as well. It appears that the missing account of the recent origin of the τέχναι was based on stories about those who invented the crafts.<sup>53</sup> He accepts these stories, but gives a proper natural history that saves both the stories of the inventors and the eternity of the universe. They were not inventing the τέχναι but reinventing them.

#### 4. Arguments and counterarguments in frg. 184.

The four counter-arguments seem to follow a pattern: where the argument against the eternity of the world relies on observations about the destructibility of one or more of the elements the answer attacks the premises these arguments are based on by criticising the use of evidence in constructing the premise. It is admitted, at least at the outset, that water does break down even the hardest form of earth, i.e. stone, but this must be balanced against the fact that mountains grow, when earth, mixed with fire, grows out of them. And it is even claimed that the stones formed in this way are exceptionally strong. It is admitted that the sea might be retreating in some areas, but this must again be balanced against evidence to the effect that it is growing in other parts of the world. This blocks the further argument that if the sea is diminishing, then earth and air must also be diminishing. In the counter-arguments to I and II the criticism is that the premise is only acquired by selective use of the evidence.

<sup>52</sup> Plato *Ti* 22C; cf. Aristotle *Met* XII, 8, 1074b10-13, and *de philosophia* frg. 8 Ross.

<sup>53</sup> *Aet* 145: εὐρετὰς τὸν λεχθέντα.



This is explicitly stated as a methodological criticism in II.b. The premise in III.a is not an observation or some form of reported evidence but an argument about wholes and parts. This is attacked in III.b, by questioning the assumption in III.a about the nature of the elements. The argument used as a premise in III.a is based on a certain view of what it is to perish for an element. Only if it can be shown that the elements, when they "die", cease entirely to exist, as opposed to change into another element, does the argument hold. Argument IV is the most peculiar, but it, and the counter-argument to it, has the same form as the rest. The evidence is the recent origin of the τέχνηαι. This is used to establish the premise, which is that no living creature is eternal. On this is based the claim, without any argument, that the elements in which these creatures live, earth, water and air, are perishable. The conclusion is that the universe is perishable. The answer admits the evidence about the recent origin of the τέχνηαι but, as before, contests the conclusion based on it. Here we find the most strongly formulated methodological criticism. The premises used in the arguments against the eternity of the world are based on bad natural history, i.e. lack of knowledge about the past *history* of nature.

Before I go any further I must briefly address the issue of whether all or only some of the contents of the arguments and counter-arguments go back to Theophrastus. It is clear that there is a number of Stoic and Philonian linguistic elements in the text.<sup>54</sup> But this has only a limited bearing on the origin of the content. The quote from Euripides is also used on two other occasions in Philo, both in *Aet*, but Philo might have picked it up from Theophrastus. The last part of II.a, the statement that the diminution of the sea carries with it the diminution of other elements, could also be seen as an anomaly in the context of the debate. The same goes for the last bit of I.b, on

the growths of mountains being strong enough to withstand the force of water. But on my interpretation of the overall structure of the arguments and counter-arguments these make perfect sense. The arguments against the eternity of the world are not a haphazard collection of observations, empirical or otherwise.<sup>55</sup> They build up towards a combined argument that attacks an Aristotelian and Theophrastean cosmology. The counter-arguments defend that cosmology without recourse to the fifth element, i.e. they attack the arguments on their own premises.<sup>56</sup> The first argument only concerns the lowest element, earth. The second argument turns to water, but generalises from this to earth and, implicitly, air. Fire would be the only element left in the scenario set up in II.a. The third argument brings in all the four elements. Fire would need something to feed on, and could therefore not stand alone. The fourth argument directly attacks three elements, and is as such only a stronger version of II.a. But it is independent of any of the other arguments.

A quick review of the evidence used in the arguments and counter-arguments shows clearly the dialectical nature of this debate. The first argument is based on a common observation of pieces of rock falling off mountains and cliffs in torrential rain and the equally common observation of perpetual succession of drops hollowing out stones. This is answered by the rather less common, it must be admitted, observation of the growth of mountains. But this is ultimately based on knowledge about mountain eruptions, which were commonly known — though possibly not by direct

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<sup>54</sup> Philo's own language was Stoic-influenced. See Sedley (1998b) 176 with n 10. Also Wiersma (1940) 235-8 on the language of the passage being post-Theophrastean.

<sup>55</sup> Kidd (1996) 143 on the combination of these four arguments: "They are indeed a strange collection." See also Sedley (1998b) 177. On my interpretation they form a coherent whole. McDiarmid (1940), particularly 246, argues that initially, at least, the entire "fragment" was a uniform argument, but that it has been badly mutilated by the later tradition.

<sup>56</sup> There is, therefore, no reason to see this as an indication of Theophrastus' rejection — or ignorance of the fifth element.

experience. The second argument is not based on common observations but rather on the recorded histories of the islands of Delos and Rhodes. This is answered by stories of other islands. The quote from Pindar in II.a is answered by a quote from an otherwise unknown poet in II.b, topped up with Plato. The argument used in III.a is shown to be unsound in III.b. In IV.b it is shown, by proper *ἱστορία φυσική*, that the recent origin of the τέχνηαι is most properly accounted for not by the recent origin of mankind, but by the partial, if regular, *destruction* of mankind. This debate is, therefore, thoroughly dialectical.<sup>57</sup> If the evidence for the age of the τέχνηαι are common stories about the first inventor, Theophrastus answers with other stories (from Plato and Aristotle), which explain how these first inventors were not first at all. Even though some of the elements in the debate have an empirical flavour, this has nothing to do with the relatively more empirical outlook of Theophrastus as compared with Aristotle. And we should not lose sight of the fact that a fundamental difference between *Cael* I, 10-12 and FHS&G 184 is that the first is concerned with proving that the cosmos is eternal while the latter is a refutation of the opposite view.

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<sup>57</sup> I.e. in the broad sense it has in Aristotle and not in opposition to empirical arguments and evidence. It is still much wider and essentially different from "empirical" on its own.

## PART II

5. *In the shadow of Aristotle.*

From the heavens and the cosmos as a whole and towards the paradigmatic natural substances: animals and plants. Considerable part of Aristotle's output concerns his enquiries into the world of animals and the bulk of what has come our way from Theophrastus are his botanical works, the *HP* and the *CP*. These works are usually, and rightly, compared with Aristotle's zoology, and Theophrastus is on most occasions either found to be an unadventurous foot-soldier, working on some of the details left out by the "master",<sup>58</sup> or a critic, unafraid to dissent from his teacher.<sup>59</sup> Some of the specific issues that have been debated are whether he challenged doctrines in Aristotle's logic,<sup>60</sup> rejected the fifth element (αἰθήρ),<sup>61</sup> the theory of natural place<sup>62</sup> and/or the unmoved-mover. More generally, but related to this, is the question of teleology. Did Theophrastus seriously doubt the value of teleological explanations<sup>63</sup> or was he only airing, in *Metaph* 10a22ff., concerns about teleological explanations for some things already Aristotle was aware of?<sup>64</sup> A recurring concern in the *Metaphysics* of Theophrastus is the degree of order (τάξις) in the natural world. How far towards "the middle" (τὸ μέσον *Metaph* 5b12) does the obvious regularity of the heavenly regions stretch? This is important for the

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<sup>58</sup> E.g. Boethius *In Aristotelis De interpretatione* 1, prooemium (FHS&G 72A). Kidd (1996) 142 "his own master (Aristotle)"; 143 "his master Aristotle"; Baltussen (2000) 31 "Theophrastus remained faithful to the teachings of his master [Aristotle]"; Fraser (1994) 169 "the master [Aristotle] left botany mainly to his pupil".

<sup>59</sup> E.g. Quint *Inst* 3.8.62 (FHS&G 694).

<sup>60</sup> Fortenbaugh (1995).

<sup>61</sup> Steinmetz (1964).

<sup>62</sup> Sorabji (1988).

<sup>63</sup> Lennox (1985), French (1994) 89-92.

question of how the *HP* relates to the *HA*. Animals are higher level beings than plants and if we accept that the degree of order diminishes as we get closer towards "the middle", there is less order to be expected in the world of plants than in the world of animals.<sup>65</sup>

Allan Gotthelf has recently put Theophrastus to the test. He concludes that in the *HP* Theophrastus is more or less trying to do the same as Aristotle in the *HA*, but not succeeding particularly well. Gotthelf reads the *HA*, following Balme, as already highly philosophically motivated study of animal differentiae, where the objective is to find and describe the highest genus to which a differentia belongs and belongs essentially (modelled on the *APo*).<sup>66</sup> According to Gotthelf, Theophrastus embarked on his botanical studies with the same purpose in mind, but failed. "I think ... that the aims of the *Historia Plantarum* are the same as those of the *Historia Animalium* ..." And: "I think it is also the case that Aristotle was farther along in his *Historia*—at least so far as the parts of their respective organisms were concerned—than Theophrastus was in his, in that *HA* has much more in the way of these widest-class generalisations that both thought necessary to the establishment of causes than does *HP*."<sup>67</sup> The other extreme can be illustrated from the introduction to the recent Budé edition and translation of the *HP*. Here Suzanne Amigues states: "Quoi qu'il en soit, la plupart des descriptions que nous lisons dans les traités botanique reposent sur l'observation directe d'un naturaliste compétant."

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<sup>64</sup> Lloyd (1987) 149 and n 161, who notes Theophrastus' greater willingness to voice his concerns and Vallance (1988) *passim*, but particularly 27-31.

<sup>65</sup> It has been argued (Senn (1933)) that there are two strata in his *HP*, one Aristotelian, one Theophrastean. For a review of this issue, see Sharples (1998) 227-230.

<sup>66</sup> The stock example from the *APo* is that it belongs to triangles as such, and essentially, that the sum of their internal angles is equal to the sum of two right angles, and that it *therefore* also belongs to isosceles triangles and all other subclasses of triangles. See my chapter III. The question is whether Aristotle intended a similar analysis for animals and, if so, whether Theophrastus, following him, also intended to do this for plants. This is the Gotthelf/Lennox view of it.

Encore plus vigoureusement qu'Aristote, Théophraste condamne la méthode spéculative et l'esprit de système appliqués aux science naturelles. Son principe, admis sans réserve par la science moderne, est d'étudier chaque espèce dans son milieu."<sup>68</sup> A combination of these views is expressed by John Raven, himself a keen botanist. He admits, after a lengthy praise of Theophrastus as a botanist, that he finds his botanical treatises boring, comparing him unfavourably to Aristotle. But he blames Aristotle for how "plodding and pedantic" Theophrastus was. "Theophrastus' taxonomy is always far more scientific when he unthinkingly follows his natural instincts than when, as he usually does, he allows himself time to think. I am tempted to conclude that the unwitting villain of the piece was none other than Theophrastus' friend, patron and master, Aristotle himself, with his emphasis on logic."<sup>69</sup> The difference between these interpretations concerns not least the concept of science applied on the works of Theophrastus and different emphases on the empirical and the theoretical in that hermeneutical concept.

In the rest of this chapter I will address the real and apparent differences between the *Historiae* of Aristotle and Theophrastus from various viewpoints, starting with how they refer to the *HA* and the *HP*.

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<sup>67</sup> Gotthelf (1988) 127.

<sup>68</sup> Amigues (1988) xiv.

<sup>69</sup> Raven (2000) 20. Cf. also Meiggs (1982) 19: "The arrangement is logical, the style undistinguished but clear, the approach scientific and impersonal. There are no diverting anecdotes and no moral disquisitions [i.e. compared to Aristotle]. We cannot therefore feel that we know Theophrastus personally." Baltussen (2000) 58, pointing to personal characteristics to explain Theophrastus' difference from Aristotle: "(a) Theophrastus accepted the basics of Aristotle's system; (b) this acceptance is balanced by the readiness to expose obscurities and inconsistencies and to correct these whenever necessary, taking later developments into account; (c) Theophrastus greatly valued empirical facts and collected these with eagerness; (d) he was reluctant to generalise and, whenever he did, his generalisations were of tentative nature." See also Lloyd (1987) 153 on the tentativeness of Theophrastus' writings and his insistence on further research, but still without departing significantly – or at least overtly – from Aristotle's *doctrines*.

6. "As I said in the *Histories*"

There are a number of references to *ιστορία* or *ιστορίαί* in the works of Aristotle and Theophrastus that are possible references to the *HA* and the *HP*.<sup>70</sup> In addition Theophrastus occasionally uses *ιστορία* within the *HP* to refer to his inquiry in general.<sup>71</sup> Aristotle uses *ιστορία* on only one occasion within the *HA*, in a methodological passage I discussed in chapter III. In the case of Aristotle we have a number of programmatic statements on the role of *ιστορία* in zoology as well as in other contexts. Theophrastus also has some important statements that bear on his methodology and the role of *ιστορία* within it, though they are not as prominent as in Aristotle. In general it can be said that he was less concerned with methodological questions in his writings than Aristotle was.<sup>72</sup> This material raises a number of problems and questions that need to be addressed. The first concerns the "title" of the works referred to, i.e. the identifying phrase used in the references. The second is how the references are formulated. Here there are marked differences between Aristotle and

<sup>70</sup> Aristotle: *Resp.* 12, 477a5; 16, 478a28; 16, 478b1; *PA* II, 1, 646a9; 3, 650a31; 17, 660b2; III, 5, 668b30; 14, 674b16; IV, 5, 680a1; 8, 684b4; 10, 689a18; 13, 696b14; *GA* I, 3, 716b31; 4, 717a33; 11, 719a10; 20, 728b13; II, 4, 740a23; 7, 746a14; III, 1, 750b31; 2, 753b17; 8, 758a24; 10, 761a10; 11, 763b16; *IA*, 1, 704b10. Theophrastus: *CP* I, i, 1; I, i, 2; I, v, 3; I, ix, 1; II, iii, 3; II, vi, 4; II, 13, 5; III, vi, 7; IV, v, 6; IV, ix, 5; IV, xvi, 2; VI, 8, 7. And on one occasion Theophrastus refers to a *ιστορία* of animals, which could be a reference to Aristotle's *HA* II, xvii, 9. It could also be a reference to one of his own lost works on animals. Of course it *can* be doubted whether all these references are to the books we know as *Historia Animalium/Plantarum*, or whether they are to books at all. But there is sufficient overlap between the materials treated in the *Histories* and the explanatory works to warrant the belief that at least many of these references are to some version of the works we have.

<sup>71</sup> I, i, 4; I, iv, 3; IV, i, 5; V, i, 1; VI, viii, 6; VII, xi, 1. In addition he once applies the verb *ιστορέω* in the context of a particular inquiry (IV, xiii, 1). I will look closer at this revealing passage below.

<sup>72</sup> There are no methodological discussions either in *Ign* or *Lap*, despite the newness of their subject matter.



Theophrastus, as well as between Aristotle's references to the *HA* and to his other works. These are two problems concerning the phrasing of the reference. In addition we must take into account the context of these references, i.e. the occasion in the referring work that calls for the reference.

In Aristotle there are 24 references to *ἱστορία* or *ἱστορίαι*.<sup>73</sup> I will look closer at some of these below, but first some statistics. These 24 references break down like this: *GA* 11, *PA* 10, *Resp* 3 and *IA* 1. Theophrastus refers to the *HP* on 11 occasions within the *CP*. His references are usually of the form: ἐν ταῖς ἱστορίαις εἴρηται (ἐλέχθη, εἴπομεν) preceded by καθάπερ, ὥσπερ or a form of the relative.<sup>74</sup> On three occasions does he follow this up with a περί clause. In *CP* I, v, 3 and IV, xvi, 2 a περί clause follows ἐλέχθη/εἴρηται and is a clarification of the content of the references and not of the work referred to, i.e. it names the particular plant under discussion ("as we said about this in the *ἱστορίαι*"). But in *CP* II, xvii, 9 there is a περί clause that characterises the *ἱστορίαι* referred to: ἅπερ ἐν ταῖς ἱστορίαις ταῖς περὶ τούτων εἴρηται. The reason for the clarification is that Theophrastus is not here referring to the *HP* but to a work on animals, περὶ τούτων referring to an account of animals that depend on other animals for generation. The "title" or "tag" that Theophrastus uses for the *HP* is therefore a plain and uniform αἱ ἱστορίαι. Where he refers to the activity of the *HP* within the *HP* (and once in the *CP* to the need for a further *ἱστορία*)<sup>75</sup> he always uses *ἱστορία* in the singular. There is, therefore, a clear distinction between a generic *ἱστορία*, in the singular, and references to the *ἱστορίαι*, i.e. the *HP*, in the plural. The formulation of the reference is also plain and uniform: "as has been said in the histories". There is never any justification for the reference, nothing about a

<sup>73</sup> Counting the opening paragraph of *PA* II as one reference.

<sup>74</sup> See e.g. Fraser (1994) 171-2 on these references.

<sup>75</sup> *HP* I, i, 4; I, iv, 3; IV, i, 5; V, i, 1; VI, viii, 6; VII, vi, 1; *CP* II, xiii, 5.

fuller or more precise account to be found in the "histories". But they do tend to come in polemical contexts of the *CP*, like the well known discussion at the start of the *CP* about spontaneous generation, which I discuss briefly below.

Aristotle usually refers to his own works with εἴρηται ἐν ... , though he also uses other expressions.<sup>76</sup> But the references to the *HA*, assuming that these are references to this work and not to "enquiries" in general, are different. To illustrate, here are two references in close proximity from the *PA*, one to ἱστορία (668b29-30) and one to ἀναπνοή (669a4):

τὸ δὲ μετ' ἀκριβείας ὥς ἔχουσιν αἱ φλέβες πρὸς ἀλλήλας, ἐκ τε τῶν  
ἀνατομῶν δεῖ θεωρεῖν καὶ ἐκ τῆς ζωικῆς ἱστορίας

...

καθάπερ εἴρηται ἐν τοῖς περὶ ἀναπνοῆς.

Lennox sees three unusual factors in this reference to *historia*: a. "there is no reference to *logoi*"<sup>77</sup>, as in the reference to *Resp*; b. "it is to dissections and an enquiry, in the singular"; c. "the adjective ... for 'animal' is used".<sup>78</sup> Of the 142 references collected by Thielscher (1948), for the sake of establishing the relative chronology of Aristotle's works, only 66 use a form of λέγειν in referring to another work. About 20 use διορίζειν, there is a number of δῆλον/φάνερρον ἐκ and occasional other means — also used on occasion to

<sup>76</sup> E.g. *Rh* 1404a38: εἴρηται ἐν τοῖς περὶ ποιητικῆς (also 1404b5; 1405a3; 1419b5); *Pol* 1261a31: ὥσπερ ἐν τοῖς ἠθικοῖς εἴρηται πρότερον (also 1280a17; 1295b13); *PA* 669a3: καθάπερ εἴρηται ἐν τοῖς περὶ ἀναπνοῆς.

<sup>77</sup> I.e. he never refers with "as I said" in any form.

<sup>78</sup> Lennox (2001) 265. Why b is only one anomaly and not two — the combination of *historia* and *anatomi*, on the one hand, and *historia* being in the singular, on the other — is beyond me. Lennox is not only sceptical about this particular passage as a reference to the *HA* but also about many other apparent references in the *PA*. It is easier for Lennox to establish a clear theoretical distinction between description and explanation in Aristotle if it can be shown that references to ἱστορία may not be references to the work later known as *Historia Animalium*, as it poses acute problems for his interpretation. It should be clear from the next couple of pages that I do not think Lennox is successful in this.

refer to the *HA*. There is, therefore, nothing very unusual about the fact that there is no mention of *logoi* in this particular reference to the *HA*. And there are references to the *HA* where Aristotle uses εἴρηται ἐν, though admittedly only two.<sup>79</sup> What is unusual is the use of θεωρεῖν ἐκ, which, apart from references to the *HA* and the *Anat*, where it is quite frequent, is hardly ever used in referring to another work.<sup>80</sup> I will return to this, but first the "title" or "tag" used in this reference and other possible references to the *HA*.

Aristotle is usually very consistent in his references to his own works. He refers, for example, to the *Poetics* by ἐν τοῖς περὶ ποιητικῆς<sup>81</sup>, to the *Analytics* by ἐν τοῖς ἀναλυτικοῖς or ἐκ τῶν ἀναλυτικῶν<sup>82</sup> and (of particular importance) to the *Dissections* by ἐν ταῖς ἀνατομαῖς or ἐκ τῶν ἀνατομῶν<sup>83</sup> and similarly to most of his other works.<sup>84</sup> A striking feature of the possible references to the *HA* is the variety of phraseology. There are ten different "titles" in the 24 possible references:

1. ἡ ἱστορία (1).<sup>85</sup>
2. αἱ ἱστορίαι (8).<sup>86</sup>
3. ἡ φυσικὴ ἱστορία (1).<sup>87</sup>
4. ἡ ἱστορία ἡ φυσικὴ (or ἡ ἱστορία τῆς φυσικῆς ) (1).<sup>88</sup>
5. ἡ ζωικὴ ἱστορία (1).<sup>89</sup>
6. ἡ ἱστορία ἡ περὶ τὰ ζῶα (2).<sup>90</sup>

<sup>79</sup> *PA* 646a9; 660b2.

<sup>80</sup> The only exception I know of is *Rh* 1404b21: τεθεώρηται ἐν τοῖς ποιήσεως .

<sup>81</sup> *Rh* 1372a1; 1404a38; b5; b26; 1405a3; 1419b5; *Po* 1341b38.

<sup>82</sup> *Rh* 1356b9; 1357a29; b24; 1403a4; a10; *Top* 162a11; b31, *SE* 165b8.

<sup>83</sup> E.g. *HA* 497a34; 525a9; 511a14; 565a13.

<sup>84</sup> I.e. either with or without the *περί* and either with ἐν or ἐκ, depending on the context.

<sup>85</sup> *GA* 763b16.

<sup>86</sup> *Resp* 478b1; *GA* 719a10; 740a23; 746a14; 750b31; 753b17; 758a24; 761a10.

<sup>87</sup> *PA* 650a31.

<sup>88</sup> *IA* 704b10: ἐκ τῆς ἱστορίας τῆς φυσικῆς.

7. αἱ ἱστορίαι αἱ περὶ τὰ ζῶα (5).<sup>91</sup>

8. αἱ ἱστορίαι αἱ περὶ τῶν ζώων (3).<sup>92</sup>

9. αἱ περὶ τὰ ζῶα ἱστορίαι (1).<sup>93</sup>

10. αἱ περὶ τῶν ζώων ἱστορίαι (1).<sup>94</sup>

Even though there is only a slight difference in some cases (6—10) this variety is significant in light of the uniformity of other references in Aristotle.<sup>95</sup> The variety itself is striking and might indicate that Aristotle is not referring to a particular work. But this would probably be going too far. Of these 24 references 18 (2, 7–10) are in the plural, and 10 (7–10) of these 18 are qualified with a *περί* clause. The *HA* is thus usually referred to with the plural *ἱστορίαι* (just like Theophrastus' references to the *HP*), sometimes with and sometimes without a *περί* clause. On one occasion (6) does he use *ἱστορία* in the singular with a *περί* clause and ἡ ζωική ἱστορία (5) is only a slight variation on that. There are, therefore, only three anomalous "titles" left (1, 3–4), and two of these can be explained by the general (quasi–methodological) character of the reference (1 and 4). The one that is left shows what a fine line there can be between a generic reference to *ἱστορία* and a reference to the *HA* (*PA* 650a31):  
δεῖ δὲ ταῦτα θεωρεῖν ἔκ τε τῶν ἀνατομῶν καὶ τῆς φυσικῆς ἱστορίας.

The context is the digestive system and in particular the relation of the mouth

<sup>89</sup> *PA* 668b30.

<sup>90</sup> *PA* 674b16; 689a18 (there is in addition a reference to a future discussion in the *GA*, and here he uses λέγειν to refer to the *GA*).

<sup>91</sup> *Resp* 478a28; *PA* 680a1; 684b4; 696b14; *GA* 717a33.

<sup>92</sup> *PA* 660b2; 646a9; *GA* 716b31.

<sup>93</sup> *GA* 728b13.

<sup>94</sup> *Resp* 477a5.

<sup>95</sup> This might be the reason why Thielscher does not quote but only lists the references to the *HA*, unlike his practice with *all* the other references he discusses. Comparable variety is shown in the possible references to the lost treatise on plants: e.g. *Long* 467b4: ἐν τοῖς περὶ φυτῶν ; *HA* 539a20: ἐν τῇ θεωρίᾳ τῇ περὶ φυτῶν ; *GA* 731a21: ἀλλὰ περὶ μὲν φυτῶν ἐν ἑτέροις ἐπέσκεπται; *Sens* 442b23: ἐν τῇ φυσιολογίᾳ τῇ περὶ φυτῶν .

to the stomach, and there are passages in the *HA* this might be a reference to (495b19 ff; 514b10 ff). But Aristotle could also be referring to "natural history" in general, and this might be called for because he has not only been talking about animals but also about plants and the relation of roots (corresponding to mouth) to earth (corresponding to stomach). Even though the variety should put us on our guard it does not warrant a full scale scepticism about the references to the *HA*. What it does possibly indicate is that a *Historia* of animals was not an easily recognised category, unlike ethics, poetics etc. When Theophrastus wrote his *Historia* it was a fixed category and easily conceptualised as ἱστορία.

Apart from the "title", Aristotle uses a variety of formulations to refer his readers/listeners to the *HA*. The most common is δεῖ θεωρεῖν ἐκ . Nowhere apart from the *HA* and the *Anat* does he use θεωρεῖν ἐκ as a way of characterising what the reader/hearer is to do with the thing referred to. Another striking aspect of some of the references is the use of γράφειν to characterise the work referred to.<sup>96</sup> It is something written or drawn. In some cases these references also involve ἀκρίβεια to characterise the account referred to, or to justify the reference.<sup>97</sup> Kullmann takes this use of γράφειν as an indication that *HA* was for Aristotle a book in a particular sense, i.e. some

<sup>96</sup> *Resp* 477a5; 478a28; *GA* 728b13; 746a14; 750b31; 753b17; 761a10. The standard way of referring to a written account is by λέγειν, e.g. in *HA* III, 2-4, where Aristotle quotes from Synthesis, Diogenes and Polybus. But see also opening of *VM*, referring to those who speak (λέγειν) and write (γράφειν).

<sup>97</sup> *PA*: 668b30; 696b15; *GA*: 716b31; 728b14; 753b17; *Resp*: 477a5; 478b1. The important methodological paragraphs from the *PA* II, 1 and the *HA* I, 6 (which I discussed in chapter III) also stress the more exact (ἀκρίβεια) or more clear (σαφέστερον) nature of the account in the *HA*, referring to it in general, i.e. not to any particular passage.

form of a lexicon or an encyclopaedia of animals or animal differentiae, a work that needs to be consulted and not a discussion to be remembered.<sup>98</sup>

I will now turn to another important feature of these references, the conjunction of ἱστορίαι and ἀνατομαί. This should not be done in isolation from the context of the references as most of them concern the anatomical systems Aristotle was mainly interested in: the digestive system, the system of blood vessels (with special emphasis on the heart and the lung) and the generative system.<sup>99</sup> Of the 24 references to ἱστορίαι 12 are in conjunction with a reference to ἀνατομαί (and one refers in general to things being cut up).<sup>100</sup> Most of these are probably references to a lost work of Aristotle's, the *Dissections (Anat)*<sup>101</sup>, that, to judge by the evidence, contained drawings or diagrams. Aristotle refers to the *Anat* from the *HA* for what must be apprehended from a διαγραφή or a σχῆμα.<sup>102</sup> But he also refers to the *HA* for pictures or diagrams, e.g. the *GA*: 746a14-15: δεῖ δὲ ταῦτα θεωρεῖν ἔκ τε τῶν παραδειγμάτων τῶν ἐν ταῖς ἀνατομαῖς καὶ τῶν ἐν ταῖς ἱστορίαις γεγραμμένων; 758a24-5: τὸ δὲ σχῆμα τῆς θέσεως ὃν ἔχει γιγνόμενα

<sup>98</sup> Kullmann (1998) 125: "Dies bedeutet offensichtlich, daß der Buchcharakter dieser Schrift für ihn besonders deutlich war. Er konnte sie nicht als Vorlesungsmanuskript benutzen. Sie diene als Buch zum Nachschlagen, auf das er seine Hörer hinweisen wollte."

<sup>99</sup> Cf. Kollesch (1997).

<sup>100</sup> *Resp* 478a28; b1; *PA* 650a31; 668b30; 674b16; 680a1; 684b4; 689a18; 696b14; *GA* 719a10; 740a23; 746a14; 750b31.

<sup>101</sup> Longrigg (1993) 161-2, suggests that Aristotle might be referring to Diocles, who, according to Galen, was the first to write on human anatomy (Eijk F 17). In support of this Longrigg claims that "neither here nor elsewhere does the possessive pronoun appear." The short reply is that Aristotle does not normally refer to his work using the possessive pronoun.

<sup>102</sup> Cf. *HA* 497a30-34 (having discussed the anatomy of the male): τὸν αὐτὸν δὲ τρόπον καὶ ἐν τῷ θήλει πάντα πέφυκεν· διαφέρει γὰρ οὐδενὶ τῶν ἔσω πλὴν ταῖς ὑστέραις, ὧν ἡ μὲν ὄψις θεωρεῖσθαι ἔκ τῆς διαγραφῆς τῆς ἐν ταῖς ἀνατομαῖς, ἡ δὲ θέσις ἐστὶν ἐπὶ τοῖς ἐντέροις; *HA* 525a8-9: ἕκαστα δὲ τούτων ὡς κεῖται τῶν μορίων, θεωρεῖσθαι ἔκ τῆς ἐν ταῖς ἀνατομαῖς διαγραφῆς; *HA* 511a11-14: αὐτῶν δὲ τούτων πρὸς ἀλλήλα τε καὶ πρὸς τοὺς ἄλλους ἰχθύς ἡ διαφορὰ τῶν ὑστερῶν ἀκριβέστερον ἂν θεωρηθεῖη τοῖς σχήμασιν ἔκ τῶν ἀνατομῶν; *HA* 565a12-13: τὸ μὲν οὖν σχῆμα τῆς ὑστέρας ὡς ἔχει, ἔκ τῶν ἀνατομῶν θεωρεῖσθαι.

τρόπον, δεῖ θεωρεῖν ἐκ τῶν ἱστοριῶν . Here we are clearly dealing with pictures or diagrams in the *HA*.

To start to get a grip on some of this information I will take a closer look at a passage from *Resp*, where it is not entirely clear whether Aristotle is referring to the work *Anat* or to actual dissections<sup>103</sup> (478a26-b1):

ὃν δὲ τρόπον ἡ καρδία τὴν σύντηρσιν ἔχει πρὸς τὸν πνεύμονα, δεῖ  
θεωρεῖν ἐκ τε τῶν ἀνατεμνομένων καὶ τῶν ἱστοριῶν τῶν περὶ τὰ ζῶα  
γεγραμμένων.

...

ὥς δ' ἡ θέσις ἔχει τῆς καρδίας πρὸς τὰ βράγχια, πρὸς μὲν τὴν ὄψιν ἐκ  
τῶν ἀνατομῶν δεῖ θεωρεῖν, πρὸς δ' ἀκρίβειαν ἐκ τῶν ἱστοριῶν.

The position of the heart in relation to the lung, on the one hand, and in relation to the gills (which function as lungs in fish), on the other, is being explained. For the relative position of the heart to the lung Aristotle insists that this must be θεωρεῖν from what has been cut open and from the written histories in the *HA*. The relation of the heart to the gills in fish must also be θεωρεῖν from the dissections/*Anat*, i.e. its ὄψις must be θεωρεῖν from the dissections/*Anat*, and the details from the *HA*. It is not clear whether Aristotle is here referring to actual cutting up or if he is referring to his work, the *Anat*. Ἐκ τῶν ἀνατομῶν, at least, could be a reference to that work, as the phrase usually seems to be a reference to it. It is clear, though, that he means that dissection is required to see how the heart connects to the lung and the gills, and this is independent of whether he is referring in these passages to dissections or to the *Anat*. But he also refers to the written account in the *HA*. A passage in the *PA* shows Aristotle referring to the two works for different kinds of materials about the same thing (680a1-4):



ὃν δὲ τρόπον ἔχει τούτων ἕκαστον, ἔκ τε τῶν ἱστοριῶν τῶν περὶ τὰ  
ζῷα θεωρεῖσθαι καὶ ἐκ τῶν ἀνατομῶν· τὰ μὲν γὰρ τῷ λόγῳ τὰ δὲ πρὸς  
τὴν ὄψιν αὐτῶν σαφηνίζειν δεῖ μᾶλλον.

The issue concerns the digestive system of the testacea, and this is clearer by sight than by words, and Aristotle is here referring to the *HA* for the words and the *Anat* for the sight.<sup>104</sup>

This shows Aristotle acutely aware of the difference between words and pictures or diagrams and their explanatory value. Some of the joint references to the *HA* and the *Anat* can be explained by this fact: the one supplies the visual aid but the other detailed discussion. Even though the *HA* included pictures or diagrams it was mainly a textual work and, to judge by the evidence, much more so than the *Anat*, which was possibly a collection of pictures and diagrams. What seems to be most important for these joint references is their context. The internal systems of the body he is discussing are not obvious, as the external parts are, and require careful descriptions and, when possible, visual representations. This could also explain why he is so fond of θεωρεῖν. The material is to be looked at, whether it is written or drawn, and contemplated as such.

<sup>103</sup> Cf. Düring (1966) 513 n 36; Lloyd (1978) 216 n 7.

<sup>104</sup> Pace Peck (1961) ad loc., note b: "This seems to imply that diagrams or illustrations accompanied the treatises."

7. *The sources of the Histories.*

Turning from these references towards the *Historiae* themselves an important area to explore are the sources available to and used by Aristotle and Theophrastus. The *HA* (and to a lesser degree the *HP*) has had a variety of responses from overdriven applause for its empirical character to a straight dismissal as a confused jumble of fact and fiction. Some of the dismissals have been based on assumptions about what "natural history" should be while much of the applause has relied on a naïve understanding of empirical knowledge. Both Aristotle and Theophrastus refer to their works as *ιστορίαι* and in generic terms to what they are about as *ιστορία*. *Ἱστορία* and a collection of *ιστορίαι* are neither "natural history" nor empirical knowledge, as these concepts are used by Aristotle's predecessors, and we need strong arguments to give it a more technical definition in his case. Both Aristotle and Theophrastus rely on a great variety of sources for their *Historiae* and this is in a sense necessitated by their striving for completion. One of the main themes of this chapter is the difficult nature of the subject matter of the *Historiae* but the works are also to a great degree influenced by the nature of the source material Aristotle and Theophrastus dealt with. Before I compare the *Historiae* from the perspective of the subject matter I will briefly review the sources used in composing them.

There have been many theories around about where Aristotle and Theophrastus got their information from. Concerning Aristotle, Jaeger assumed that all the descriptions must be based on autopsy, either Aristotle's own or those of his collaborators.<sup>105</sup> To explain descriptions of animals only found in

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<sup>105</sup> On Jaeger's developmental thesis the biological works belong to the third and last period of Aristotle's development and mark the culmination of his transformation from a Platonist to an empirical scientist, cf. Jaeger (1955) 347: "In der dritten Periode erscheint nun etwas gänzlich Neues und Eigenes. Er wendet sich der empirischen Einzelforschung zu, wo er durch die

the Far East (Aristotle's and Theophrastus' knowledge of the east was much greater than of the west) he thought the *HA* must have been composed after Alexander went on his campaign to the east (as Pliny indeed<sup>106</sup>). Similarly it has been argued that Theophrastus must have spent considerable time in Egypt, because he shows great familiarity with the flora of the region.<sup>107</sup> But we need not assume that Aristotle and Theophrastus based their descriptions on autopsy, not even in cases where there is nothing to indicate that anything else might be the case. Nor should we be hasty in criticising them for dishonesty on this account. Our assumptions about "natural history" may not have been their assumptions about ἱστορία.<sup>108</sup>

There is a great variety of sources both Aristotle and Theophrastus rely on in their *Historiae*. Some information is from their own observations, which include dissections.<sup>109</sup> Observations, dissections (and other "experiments") are never without problems and Aristotle often points this out. Some things are difficult to observe, like the internal organs of the smaller Testacea<sup>110</sup> and the copulation of oviparous fish<sup>111</sup>. Some things have not yet been observed, for instance the peculiar larva called ξυλοφθόρον<sup>112</sup>, which turns

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folgerichtige Durchführung seines Formgedankes zum Schöpfer eines neuen Typus der Wissenschaft wird."

<sup>106</sup> *NH* VIII, 17, 44 ff.

<sup>107</sup> Capella, quoted by Fraser (1994) 180-1, with Fraser's emphatic refutation of this view.

<sup>108</sup> This is similar to the debate on the sources of Herodotus, where Fehling and his followers criticise Herodotus for not living up to a standard of history they impose on him.

<sup>109</sup> There is no need to list all important observations. In chapter III I dealt extensively with one of Aristotle's most celebrated observations/experiments: the egg experiment. There can be little doubt that Aristotle did the egg experiment himself, but many other observations and dissections described in the *HA* and the other zoological writings are more difficult to determine. When did Aristotle do it himself and when did some of his collaborators? See Lloyd (1979) 211 for some reflections.

<sup>110</sup> *HA* 529a28-29; b4-5.

<sup>111</sup> 541a11.

<sup>112</sup> Codd. Most editors have amended to ξυλοφόρον: it is either a wood-carrying or wood-destroying insect. Peck translates: "faggot-bearer, as queer a creature as any of them" (οὐδενὸς ἥττον ἄτοπον τούτων τῶν ζώων ).

into a chrysalis but no one has observed into what winged creature it then develops.<sup>113</sup> This must mean that despite everything he tried there was no information to be had on this peculiar creature. There are many cases where further observations and enquiries are needed and neither Aristotle nor Theophrastus is afraid of emphasising this.<sup>114</sup> There are also things that can only be observed in dissections. To observe what is inside the body the body needs to be cut open. It is, for instance, impossible to inspect (ἀδύνατόν ἐστι θεάσασθαι) the blood vessels in living animals because they are on the inside.<sup>115</sup> But dissection is not as easy as just cutting the body open. The nature of the blood vessels, for instance, can not be discovered in dead and dissected animals because the vessels collapse as soon as the blood leaves them.<sup>116</sup> (Similarly the position of the apex of the heart is difficult to determine as it can change in dissection.<sup>117</sup>) Aristotle uses this to criticise the theories of Syennesis, a doctor (ιατρός) from Cyprus, Diogenes of Apollonia and Polybus with extensive quotations from their writings on the blood vessels, only to return with the proper method to proceed in dissecting animals without losing the blood from the vessels: the blood vessels can only be observed when previously emaciated animals are strangled.<sup>118</sup>

<sup>113</sup> HA V, xxxii, 557b13ff.

<sup>114</sup> E.g. HA 493b14 and 580a19-22. Theophrastus seems to be more willing to do so than Aristotle and he frequently ends individual discussions with a formula like τοῦτο οὖν ἐπισκεπτέον. On occasion he refers to the need for further enquiries into mutations in plants, but this time unfulfilled, like CP II, xiii, 5:

τὰ δὲ καθ' ἕκαστα μᾶλλον, ἴσως δὲ καὶ μόνως, ἂν τις ἀποδοίη τὴν ἐμπειρίαν προσλαβὼν χώρας καὶ τόπου διὰ τῆς ἱστορίας.

Further enquiry is needed in order to gain more expert knowledge about each plant and plant classes. Here his explanations stop for want of further enquiry. Cf. also I, v, 5, on spontaneous generation: ἀλλὰ τοῦτο μὲν ὡς ἐπιδοξαζόμεν εἰρήσθω· δεῖ δὲ ἀκριβέστερον ὑπὲρ αὐτοῦ σκέπασθαι καὶ ἀνιστορῆσαι τὰς αὐτομάτους γενέσεις.

<sup>115</sup> HA 511b18-20.

<sup>116</sup> HA 511b14-16.

<sup>117</sup> HA 496a9ff. The Empiricists later used similar arguments against dissection in general.

<sup>118</sup> HA 513a12-15. For dissection in general and Aristotle in particular see Lloyd (1979) 156-169.

Observations can be difficult and dissections must be done properly if they are to give useful results. But when they are properly done they can hardly be bettered. Autopsy is as certain knowledge as can be but there are cases where detailed observations must give way to other evidence. In *HA* IV, viii, 533a31ff. Aristotle discusses the perceptual organs of fish. They have no visible sense organs for hearing and smelling but evidence from methods of fishing shows clearly that they hear and smell. Here, detailed observations of the physiology of fish do not stand against information from fishermen.<sup>119</sup> They are among special groups Aristotle frequently refers to for information, like hunters, doctors, veterinarian surgeons and midwives as well as all kinds of animal breeders: horse-, pig-, peafowl-, bee- and eel-breeders, to name some. These must be classified as specialists due to their extensive experience with the kinds of animals they deal with on a daily basis.<sup>120</sup> The evidence for the hearing and smelling of fish is not based on a single report but the knowledge of fishermen as a group. It can not be doubted, or at least not easily. But there are also cases where the specialists can not be counted on because they are not in the same knowledge driven business as Aristotle. In *GA* 756a33f. he insists that fish do copulate even though fishermen have not observed them to. The copulation takes very short time and escapes the sight of fishermen because they are not looking out for these things. As with dissections, observations must be done appropriately. If Aristotle uses those who deal regularly with animals Theophrastus uses those who are specialists in plants. Most of the unspecified third person plural subjects he refers to must be farmers and people who grow trees and plants, and some detailed observations may be

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<sup>119</sup> He also argues in the other direction in the immediately following lines, i.e. from observed physiology against the claims of the fishermen (and Herodotus) that fish conceive by swallowing the milt (756b4ff.): the passage from the mouth passes into the stomach and not the uterus.

<sup>120</sup> The egg experiment is done with domesticated hens.

Theophrastus' own from the garden he apparently had.<sup>121</sup> But he also, and in particular in *HP IX*, cites root-cutters and drug-sellers, some of them named, for the properties of plants.<sup>122</sup> These sources are useful but not beyond doubt. They are, in particular, prone to exaggeration in order to glorify their craft (cf. *HP IX*, 8, 5 and 19, 2–3).

Apart from these groups of people there are also named individuals. These include the usual suspects, the "pre-Socratics" and Plato, as well as Syennesis, Diogenes and Polybus, mentioned above, but also Ctesias and Herodotus<sup>123</sup> and even Homer, Stesichorus and Musaeus<sup>124</sup>, and many more. Individuals are often brought in to be criticised but also for information and the most unlikely individuals (Stesichorus and Musaeus, for instance) are used for positive evidence. Among those Aristotle (and Theophrastus) uses on a number of occasions, without citing him by name, is Herodotus. He might not seem an obvious choice for reliable information on the world of animals or plants and it is all the more significant that he is so used. When Aristotle writes that a human skull *has been seen* that has no sutures<sup>125</sup> he is most probably referring to Herodotus IX, 83 and Herodotus may also be the source for the claim that in Europe lions are only found on a strip of land between the rivers Achelous and Nessus.<sup>126</sup> There are no indications that he has any reservations about these claims or that he treats them in a way different from his own observations and on another occasion he emphatically claims as true that the

<sup>121</sup> DL V, 52. He never talks about his personal experience of plants and only once mentions seeing a plant, in *HP IV*, xii, 2: θαυμαστόν γ' ἦν ἰδεῖν. This has more to do with style than substance, as Theophrastus has obviously looked hard at many plants.

<sup>122</sup> Analysed by Lloyd (1983) 121–125.

<sup>123</sup> Ctesias is untrustworthy, *HA* 606a8; Herodotus a μυθολόγος, *GA* 756b6 (clearly pejorative).

<sup>124</sup> *HA* 519a18–19; 542b24; 563a16.

<sup>125</sup> *HA* 516a19–20: ἤδη δ' ὥφθη καὶ ἀνδρὸς κεφαλὴ οὐκ ἔχουσα ῥαφάς .

<sup>126</sup> *HA* 579b5f, cf. Herodotus VII, 126.

Pygmies live in the region south of Egypt, where the Nile has its source.<sup>127</sup> Though the Pygmies were well known in Greek literature the combination of the source of the Nile and the story of the Pygmies indicates that Herodotus II, 32, 2 is his source for this story.<sup>128</sup> If that is true he seems to have no qualms about using Herodotus as a source of facts, at least not when he uses him without mentioning him by name. Because he is not as charitable when he does name Herodotus. On one occasion he calls him a μυθολόγος in dismissing his and fishermen's tales about fish conceiving through the mouth.<sup>129</sup> Without overdoing the duplicity of Aristotle in this case it is important to keep in mind how flexible he is in his use of written sources. Theophrastus seems also to use Herodotus without any doubts about his value as a source of information when discussing the olive tree in *HP* II, iii, 3. Here he brings into play some abnormal changes in olive trees, like what is said to have happened to Thettalos, son of Pisistratus, whose olive lost its leaves but still bore fruits, and the olive in Boiotia whose young shoots were eaten by locusts but grew again. A third example is the olive that sprang up again entire after being completely burnt down. This is most probably the olive tree on the Acropolis the Persians burnt down in 479, described in Herodotus VIII, 55. All these are stories of individual trees and these abnormalities can all easily be causally explained, according to Theophrastus. It is more difficult to deal with abnormal cases of a more general nature, like when trees do not bear fruits where they naturally

<sup>127</sup> HA 597a7ff.: οὐ γάρ ἐστι τοῦτο μῦθος ἀλλ' ἔστι κατὰ τὴν ἀλήθειαν γένος μικρὸν μὲν ὥσπερ λέγεται .

<sup>128</sup> As argued by T.K. Johansen (1999) 281.

<sup>129</sup> GA 756b6f. For Aristotle's use of Herodotus in the zoology see Lloyd (1979) 212, and now in particular T.K. Johansen (1999). If the P.Oxy. 4458 col. I (*Oxyrhynchus Papyri* vol. LXV, 1998) is really a genuine fragment of Aristotle's *De inundacione Nili* he also calls him μυθογράφος (6). This would again be clearly pejorative, as he is criticising Herodotus theory. Remember that Herodotus himself uses μῦθος when referring to the explanation based on the river Ocean. The Latin translation (Rose frg. 248) has: "fabularum scriptor".



grow. Inductive science of any sort must take seriously every claim that is out of the ordinary.<sup>130</sup>

All this variety of information — named and unnamed individuals, named or unnamed groups of people, planned and unplanned observations, written and oral sources, etc. — must, in general, count as *ιστορία*. This must make us sceptical about claims to the effect that *ιστορία* in Aristotle and Theophrastus is fundamentally different from the concept as used by earlier writers such as Herodotus and the Hippocratics. It is obvious that there are different degrees of reliability for these various forms of information counted as *ιστορία*, and Aristotle's and Theophrastus' treatment of the material shows this in practice. Autopsy can not easily be refuted by a report or a story, though the story can cause problems for how to interpret the apparent facts. But often it is the case that stories, reports old and new, are the only thing to go by. Reported facts can never be dismissed on principle and we cannot assume, as has often been done, that the reports are by designated collaborators or students. The opposite is often obviously true: much information is derived from a variety of old and new sources of any sort available. The principle seems to be that anything is better than nothing, though nothing is beyond criticism. It remains that all of this, observations, experiments, the cumulated knowledge of craftsmen as well as written and orally reported stories, count as *ιστορία*.

To emphasise the inclusiveness of *ιστορία* there is one particularly revealing passage in the *HP*, which also happens to be the only use of the verb *ιστορεῖν* in the botanical works (the verb is never used by Aristotle). In the *HP* IV, xiii, 1–6 Theophrastus discusses the length and

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<sup>130</sup> If someone claims to have a specimen of a white raven it must be looked into. Is it a raven? Is it white? If it is a white raven, are there any causes that can explain it being white (e.g., are its feathers dyed)? Black swans were discovered in Australia, after all.

shortness of the life of plants. He starts by noting, very briefly, that water plants, like water animals, are generally shorter lived than those on dry land. Then: τοὺς δὲ καθ' ἕκαστον βίους ἱστορῆσαι δεῖ τῶν χερσαίων . He promptly does this. First he refers to the "woodmen" (ὄρεοτύποι), who say that the wild kinds are almost all without exception long lived and none short lived. Theophrastus agrees with this judgement, though he discusses the claim with reference to the relative length of life of cultivated plants, which are obviously more familiar to him than the wild plants. Wild plants as a whole are longer lived than cultivated plants as a whole, and considering individual kinds of plants, the wild variety is longer lived than the cultivated one. As further evidence of the comparative length of life of trees in particular he cites stories handed down in mythology.<sup>131</sup> These concern the olive in Athens, the palm in Delos and the wild olive at Olympia. When were they planted and by whom? How old are they? This leads to a discussion about the relative length of life of various types of trees. Olives and palms are long lived while apples, figs and others are short lived. He follows this up with a discussion about identity problems: when a tree grows from the same root as one that has been cut down, is it a new tree or the same one? If it is the same it seems possible to prolong the life of individual trees almost indefinitely; which is what vine growers do. The contest is mainly between vine and olive – two of the best known plants in Greece – and there is a number of "they say" to back up various claims.

However we decide this question it remains that the ἱστορεῖν he has given us is a mixture from various sources: the "woodmen", traditional stories — both written and oral — and a fair bit of his own theorising based on common knowledge. This fits quite well with what we get in the *Historiae* of Aristotle and Theophrastus. Independently of how they present the material —

<sup>131</sup> IV, xiii, 2: τὴν δὲ μακροβιότητα μαρτυροῦσιν ἐπὶ γέ τινων καὶ ἡμέρων καὶ ἀγρίων

which is important enough — the *ἱστορία* in it seems much closer to the *ἱστορίη* of Herodotus than many would like to admit. This in itself puts a strain on how systematic Aristotle and Theophrastus can be in their *Historiae*, quite apart from the problematic nature of the subject matter they deal with. To this I now turn.

### 8. *Animals and plants as objects of ἱστορία.*

Reading the *HP* book one and comparing it to the *HA* book one reveals some essential similarities. Aristotle spends most of *HA* I discussing in general terms the parts of animals, only spending some few pages on their differences *κατά τε τοὺς βίους καὶ τὰς πράξεις καὶ τὰ ἥθη καὶ* [i.e. "as well as"] *τὰ μορία* (*HA* I, 1, 487a10f.). The *HP* opens with these words:

τῶν φυτῶν τὰς διαφορὰς καὶ τὴν ἄλλην φύσιν ληπτέον κατὰ τε τὰ μέρη καὶ τὰ πάθη καὶ τὰς γενέσεις καὶ τοὺς βίους· ἥθη γὰρ καὶ πράξεις οὐκ ἔχουσιν ὥσπερ τὰ ζῷα.

He goes on to say that their differences according to parts are the only differences difficult to observe, and he accordingly uses most of the space on discussing the parts of plants. It is interesting to note that he picks up two of the differences Aristotle had identified, the way of life (*βίος*) and the parts, while explicitly excluding two from Aristotle's list. But he adds two and ends up with a list of four, like Aristotle.<sup>132</sup>

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καὶ αἱ παραδεδομένοι φῆμαι παρὰ τῶν μυθολόγων.

<sup>132</sup> Aristotle was keenly interested in the *γένεσις* of animals. He devoted a study to it and in the *HA* there are three whole books about reproduction (V-VII). This indicates that Theophrastus is responding to *HA* I more than anything.

This explicit comparison with animals is a recurring theme in book one. Section I, i, 3 starts:

τάχα δὲ οὐχ ὁμοίως ἅπαντα ζητητέον οὔτε ἐν τοῖς ἄλλοις οὔθ' ὅσα  
πρὸς τὴν γένεσιν, αὐτά τε τὰ γεννώμενα μέρη θετέον, οἷον τοὺς  
καρπούς· οὐδὲ γὰρ τὰ ἔμβρυα τῶν ζώων.

Theophrastus has spent a page or so on how difficult it is to determine what is a part in the case of plants (are leafs, flowers, shoots, etc. parts?). Here he doubts how generally we should expect plants to be alike animals, and explains this by wondering whether what counts as difference according to γένεσις in animals might not belong to parts in plants. So the categories used to analyse the differences in the case of animals do not necessarily apply in the same way to plants. He expresses the same general concern at the start of I, i, 4 and goes on to say:

ὅσα γὰρ μὴ οἷόν τε ἀφομοιοῦν, περίεργον τὸ γλίχεσθαι πάντως· ἵνα μὴ  
καὶ τὴν οἰκείαν ἀποβάλωμεν θεωρίαν. ἡ δὲ ἱστορία τῶν φυτῶν ἐστίν,  
ὥς ἀπλῶς εἰπεῖν, ἢ κατὰ τὰ ἔξω μόρια καὶ τὴν ὅλην μορφὴν ἢ κατὰ  
τὰ ἐντός, ὥσπερ ἐπὶ τῶν ζώων τὰ ἐκ τῶν ἀνατομῶν.

Stressing that we should not lose sight of the proper enquiry by concentrating too much on comparison with animals, Theophrastus cannot help but make comparison with the study of animals. These examples can be multiplied (see e.g. I, i, 9). Animals are constantly at the back of Theophrastus' mind in his study of plants. This is to some degree out of necessity. Theophrastus is doing something new, in a sense inventing "botany", and he needs something to model it on. Vocabulary is one significant problem (I, ii passim, but particularly 3ff.). In this part of the *HP* (I, ii) he is discussing the principles (ἀρχαί) of plants, particularly the principles of the homoiomerous parts, for

which the vocabulary is largely based on animals (flesh, veins, etc.), because they are better known. When, for instance, it comes to the core (μήτρα) some call this "heart" (καρδία) others "interior" (ἐντεριώνη), but some call the inner part of the core "heart" while some call this "marrow" (μυελόν) (I, ii, 6). Just talking about plants on this level is comparing them to animals.

Aristotle frequently refers to plants for comparison in his zoological works. They all seem to emphasise the hierarchy of nature and are typically brought in where Aristotle approaches that level of the zoological world that is closest to plants, in particular where he is discussing the initial stages of generation.<sup>133</sup> Other examples are his discussions of spontaneous generation and the testacea. In the *HA* (V, 1, 539a16-25) and in the *GA* (III, 11, 762b18ff.) where he discusses spontaneous generation he refers to plants, as there are common features to spontaneous generation in plants and animals, though the explanation in the case of animals is rather more complex than in the case of plants (*GA* 762a18-21). In *HA* book V, Aristotle turns to generation of animals, and the testacea are the first group he discusses. This is the reverse order of what he has practiced so far in the *HA*. His usual procedure is to start with what is best known, i.e. man, and use it as a guide through the enquiry. He justifies this reverse procedure at the start of book V. Generation in the case of man is the most complicated. Therefore he decides to start from the other end, the most simple. These are the testacea, and he has numerous occasions to compare them to plants.<sup>134</sup> A characteristic of the testacea is that they are spontaneously generated.<sup>135</sup> What makes them particularly like plants is the fact

<sup>133</sup> See Lloyd (1996) 67-82 on the "fuzzy nature" of these border creatures. There is also a substantial discussion of plants in the *NatPuer* in order to clarify what happens in conception and at the initial stages of the development of the foetus.

<sup>134</sup> Not only in book V, but also e.g. in IV, 11, 538a18-22. The testacea share in the nature of plants and animals regarding generation, cf. *GA* 731b9f.

<sup>135</sup> *HA* V, 14, 547b18-19: ὅλως δὲ πάντα τὰ ὀστρακώδη γίγνεται μὲν αὐτόματα ἐν τῇ ἰλύϊ, κατὰ δὲ τὴν διαφορὰν τῆς ἰλύος ἕτερα, κτλ.

that they are stuck to the ground (*GA* I, 1, 715b16-25; some can move around, though, cf. *HA* IV, 4, 528a30-33). It is especially when Aristotle is dealing with animals and aspects of animals that are close to plants in their nature that he brings in plants for comparison. At the end of this last discussion he states on principle, though, that plants must be investigated on another occasion.<sup>136</sup> This gives Theophrastus the opportunity to question some of Aristotle's *assumptions* about plants, without him going all the way to overtly question the *theories* Aristotle bases on these assumptions, as in the case of the theory of spontaneous generation.

An example of this is the discussion about generation from seed (in *HP* II, i, 2<sup>137</sup>). Theophrastus mentions "some", *τινες*, who are not entirely convinced that all plants can be generated from seed, because farmers, as a matter of fact, do not use seed in growing them. *καίτοι, καθάπερ ἐν ταῖς ιστορίαις εἴρηται, καὶ φανερώτατον ἐπὶ τῶν ἰτεῶν*. This is a reference to the *HP* III, i, 2-3. Here the seed-principle is stated: *ὅσα δὲ ἔχει σπέρμα καὶ καρπὸν, καὶ ἀπὸ ρίζης γίνηται, καὶ ἀπὸ τούτων, ἐπεὶ καὶ τὰ δοκοῦντα ἄκαρπα εἶναι γεννᾶν φασιν, οἷον πετέαν ἰτέαν* (*HP* III, i, 2). This and the following discussion is based on a report (*τινες* is the subject of a number of third person plural verbs), and Theophrastus even refers to the "poet" (Homer, *Od* X, 510) for the opinion that willows (*ἰτέα*) shed their fruits early (*HP* III, i, 3). In the *GA* Aristotle states: *ἐνία δ' ὅλως οὐδὲ φέρει σπέρμα*,

<sup>136</sup> *περὶ μὲν οὖν φυτῶν, αὐτὰ καθ' αὐτὰ χωρὶς ἐπισκεπτέον* (*GA* I, i, 716a1). Aristotle has been discussing spontaneous generation, where he frequently refers to plants for comparison. He proceeds to discuss "the other animals", i.e. those not spontaneously generated. Morsink (1982) argues that this is not a reference to a missing treatise, but a statement of the principle that plants need to be looked into separately.

<sup>137</sup> This is how the discussion starts, by distinguishing the possible ways of generation: *αἱ γενέσεις τῶν δένδρων καὶ ὅλως τῶν φυτῶν ἢ αὐτόμαται ἢ ἀπὸ σπέρματος ἢ ἀπὸ ρίζης ἢ ἀπὸ παρασπάδος ἢ ἀπὸ ἀκρεμόνος ἢ ἀπὸ κλωνὸς ἢ ἀπ' αὐτοῦ τοῦ στελέχους εἰσὶν — ἢ ἔτι τοῦ ξύλου κατακοπέντος εἰς μικρά· καὶ γὰρ οὕτως ἐνία φύεται. τούτων δὲ ἢ μὲν αὐτόματος πρώτη τις, αἱ δὲ ἀπὸ σπέρματος καὶ ρίζης φυσικώταται δόξαιεν ἂν· ὥσπερ γὰρ αὐτόμαται καὶ αὐταί, διὸ καὶ τοῖς ἀγρίοις ὑπάρχουσιν· αἱ δὲ ἄλλαι τέχνης ἢ δι' προαιρέσεως.*

that they are stuck to the ground (GA I, 1, 715b16-25; some can move around, though, cf. HA IV, 4, 528a30-33). It is especially when Aristotle is dealing with animals and aspects of animals that are close to plants in their nature that he brings in plants for comparison. At the end of this last discussion he states on principle, though, that plants must be investigated on another occasion.<sup>136</sup> This gives Theophrastus the opportunity to question some of Aristotle's *assumptions* about plants, without him going all the way to overtly question the *theories* Aristotle bases on these assumptions, as in the case of the theory of spontaneous generation.

An example of this is the discussion about generation from seed (in HP II, i, 2<sup>137</sup>). Theophrastus mentions "some", *τινες*, who are not entirely convinced that all plants can be generated from seed, because farmers, as a matter of fact, do not use seed in growing them. *καίτοι, καθάπερ ἐν ταῖς ιστορίαις εἴρηται, καὶ φανερώτατον ἐπὶ τῶν ἰτεῶν*. This is a reference to the HP III, i, 2-3. Here the seed-principle is stated: *ὅσα δὲ ἔχει σπέρμα καὶ καρπὸν, καὶ ἀπὸ ῥίζης γίνηται, καὶ ἀπὸ τούτων, ἐπεὶ καὶ τὰ δοκοῦντα ἄκαρπα εἶναι γεννᾶν φασιν, οἷον πετέαν ἰτέαν* (HP III, i, 2). This and the following discussion is based on a report (*τινες* is the subject of a number of third person plural verbs), and Theophrastus even refers to the "poet" (Homer, *Od* X, 510) for the opinion that willows (*ἰτέα*) shed their fruits early (HP III, i, 3). In the GA Aristotle states: *ἔνια δ' ὅλως οὐδὲ φέρει σπέρμα*,

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οἶον ἰτέα καὶ αἰγείρος (I, 18, 726a6f.). He does not refer to an observation, either his own or someone else's, but backs this up with a theory that explains why these trees cannot produce seed. Theophrastus is obviously not a slave to Aristotle's opinions.<sup>138</sup> But it is noteworthy that he bases his disagreement not on observation but on an unspecified report. This shows a characteristic of *ἱστορία*: in principle it can always be refuted in a variety of ways. A better observation, another report, and what we believed to be the case no longer seems to be the case. This also opens up for the possibility of the growth of knowledge (cf. my ch. II). Theophrastus is not criticising Aristotle's methodology or his knowledge base in general, only some particular observations.

It seems, therefore, obvious that the comparison with animals, and in particular with Aristotle's *HA*, was an important part of Theophrastus' project in the *HP*. The reason is the same as why man is constantly at the back of Aristotle's mind. Understanding the lower animals and plants is a downward process. The hermeneutical move is top down. But this does not mean that he was importing wholesale Aristotle's methodology to the study of plants. He even goes out of his way to stress the distance between the study of plants and the study animals. In the course of book one Theophrastus repeatedly claims that we should not expect a complete correspondence between plants and animals, and he stresses in particular that plants are more diverse and manifold than animals. Thus in I, i, 10-11:<sup>139</sup>

<sup>138</sup> He frequently corrects Aristotle on matters of fact, without ever mentioning him by name. Another example, also concerning spontaneous generation, is his explanation of how the mistletoe is generated from seed (*CP* II, 17, 5) that is brought to the host tree by birds who have eaten the fruits, correcting *GA*, I, 1, 715b25-30.

<sup>139</sup> See also I, ii, 3: ἔχει δὲ ἴσως καὶ ἄλλας διαφορὰς καὶ ταῦτα καὶ ὅλως τὸ τῶν φυτῶν γένος· πολύχουν γὰρ ὥσπερ εἰρήκαμεν. The context is the use of animal vocabulary for the internal parts of plants, which is largely derived from animals. He carries on with this justification:

ὅλως δὲ πολύχουν τὸ φυτὸν καὶ ποικίλον, καὶ χαλεπὸν εἰπεῖν καθόλου·  
σημεῖον δὲ τὸ μηδὲν εἶναι κοινὸν λαβεῖν ὃ πᾶσιν ὑπάρχει, καθάπερ  
τοῖς ζώοις στόμα καὶ κοιλία. τὰ δὲ ἀναλογία ταῦτά, τὰ δ' ἄλλον  
τρόπον.

Explicitly comparing plants to animals he claims that, unlike animals, there is no one thing common to all plants. Whereas all animals have a mouth and a stomach, it is only possible to generalise something for all plants by resorting to analogy<sup>140</sup> or some other form of comparison. Theophrastus is probably here thinking about a passage in the HA, where Aristotle says (I, 2, 488b29f):

πάντων δ' ἐστὶ τῶν ζῶων κοινὰ μόρια, ᾧ δέχεται τὴν τροφήν καὶ εἰς ὃ  
δέχεται.

But importantly Aristotle goes on to say (*ibidem*):

ταῦτα ἐστὶ ταῦτά καὶ ἕτερα κατὰ τοὺς εἰρημένους τρόπους, ἢ κατ'  
εἶδος ἢ καθ' ὑπεροχὴν ἢ κατ' ἀναλογίαν ἢ τῇ θέσει διαφέροντα.

So that *through* which and *into* which animals receive food, i.e. the mouth and the stomach, is not generalisable to all animals in any stronger sense than by analogy, which seems to be the same as Theophrastus is claiming for plants. They seem, therefore, to agree on this point, i.e. that there are no *differentiae* generalisable for respectively all animals and plants in any stronger sense than

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ἀλλ' ἐπεὶ διὰ τῶν γνωριμωτέρων μεταδιώκειν δεῖ τὰ ἀγνώριστα, γνωριμώτερα δὲ  
τὰ μείζω καὶ ἐμφανῆ τῇ αἰσθήσει, δηλονότι καθάπερ ὑφήγηται περὶ τούτων  
λεκτέον. ἐπαναφορὰν γὰρ ἔχομεν τῶν ἄλλων πρὸς ταῦτα μέχρι πόσου καὶ πῶς  
ἕκαστα μετέχει τῆς ὁμοιότητος.

According to this fairly unproblematic principle Theophrastus uses what is known about the interior of animals to talk about the interior of plants, and animals in general to understand plants. When it comes to plants, trees are used as an introduction to plants — they are both bigger and better known than other plants, and apart from that they exhibit the characteristics of plants better than "lesser" plants.

by analogy. But there is a difference. Aristotle says that almost all animals have that part in common by which they discharge food. But not all. And then (HA I, ii, 489a1-2):

καλεῖται δ' ἥ μὲν λαμβάνει, στόμα, εἰς ὃ δὲ δέχεται, κοιλία· τὸ δὲ λοιπὸν πολυώνυμόν ἐστιν.

So only that through which and that into which animals receive food have a common name in the case of all animals. And this obviously carries some weight with Aristotle.

Theophrastus was concerned with putting a distance between his study of plants and the better known (i.e. in the context within which he was working) study of animals. But it is important to note that he stresses the difference on the level of subject matter, and not on the level of method. He is not disagreeing with Aristotle, but arguing that his enquiry is different as it is an enquiry into different things.

### 9. Location, cultivation and the classification of plants.

To understand how different plants are I will look into problems Theophrastus faced in his practice of classifications, the effects of location and cultivation on plants. Theophrastus proceeds in the *HP* according to his general classification of plants into four different kinds: trees, shrubs, under-shrubs and herbs (*HP* I, iii, 1). The justification for this classification is that it makes the study σαφέστερος, meaning that it is clearer and at least a helpful rough

<sup>140</sup> On analogy, though cryptic, see *Metaph* 9a4-9.

classification to deal with the chaotic material of the plant kingdom. These classes are based on the relations between the most important parts of the plant: root, stem branch and twig (*HP* I, i, 9).<sup>141</sup> These distinctions or definitions (*ὅροι*), he says, must only be taken to apply in a general sense, and not to each and every plant. Some seem to cut across these classes, either by nature or through cultivation — where they depart from nature (I, iii, 2):

ἔνια γὰρ ἴσως ἐπαλλάττειν δόξειε, τὰ δὲ καὶ παρὰ τὴν ἀγωγὴν  
ἀλλοιότερα γίνεσθαι καὶ ἐκβαίνειν τῆς φύσεως, κτλ.

Some under-shrubs and herbs, for instance, seem to belong to the class of trees, as they grow one stem from the root (I, iii, 4). On the other hand, some trees, for instance apple and pear, are by nature more like shrubs than trees, and it is only by cultivation that they become like proper trees with only one stem (I, iii, 3). διὰ δὲ ταῦτα ὥσπερ λέγομεν οὐκ ἀκριβολογητέον τῷ ὄρω ἀλλὰ τῷ τύπῳ ληπτέον τοὺς ἀφορισμούς (I, iii, 5). Theophrastus therefore suggests other classifications, like size and length of life or classifications based on the presence or absence of fruits, flowers, evergreenness and/or cultivation (I, iii, 5). In I, iv, 2 he suggests locality and climate, locality being more important in the case of plants than in the case of animals as plants are stuck to the ground (I, iv, 4). He returns to these varieties of classification at the end of book I (xiv, 3-5), where he in particular stresses locality and cultivation, which are often causally responsible for the presence or absence of fruits, flowers and evergreenness and therefore, in a sense, more fundamental than those. But locality and cultivation can also often upset the basic classification into trees,

<sup>141</sup> He goes "deeper" into the parts of plants in the following chapters: I, ii, 1: the homoiomerous parts like bark, wood and core; these are composed of sap, fibre, veins and flesh; the deepest level is moisture and warmth (I, ii, 4). I, ii, 7: τὰ μὲν οὖν μόρια σχεδόν ἐστὶ τοσαῦτα. σύγκειται δὲ τὰ ὕστερον ἐκ τῶν προτέρων.

shrubs, under-shrubs and herbs and, it seems, almost any classification at any level in the study of plants (I, iii, 2-3). I will look closer at cultivation below, but first locality, and the exceptional case of the date-palm.

At the start of *CP* Theophrastus argues that all seed bearing plants can be generated from seed. In the *CP* I, i, 3 ff. he continues discussing seed-bearing plants, identifying a group that can only be grown from seeds: plants that are dry, single-stemmed and without side shots (ξηρὰ καὶ μονοφυῆ καὶ ἀπαράβλαστα) can not grow from side-shots or branches, i.e. practically speaking they can only be grown from seed. Being single-stemmed they can not grow from side-shots, being dry the branches and twigs are too dry for them to be able to produce independent life.<sup>142</sup> At the beginning of I, i, 4 he moves from discussing plants that can only be generated from seed to those that can also be generated from other parts, with this formulaic expression:

καὶ ταῦτα μὲν διὰ τὰς εἰρημένους αἰτίας· τὰ δέ κτλ.

And he ends i, 4, and the discussion of this initial dichotomy, with an expression summing up:

καθόλου μὲν οὖν καὶ τύπῳ τοῦτον διωρίσθω τὸν τρόπον.

In chapter iii he turns to differences among those that generate from different parts, as they do not all generate from all of them, and the reasons why some plants generate in one way and some in another. In between, i.e. in chapter ii, he discusses an exception to the initial classification: the date-palm (φοῖνιξ) in

<sup>142</sup> Cf. *HP* I, ii, 4: πρῶτα [of the most important homoiomerous parts] δέ ἐστι τὸ ὑγρὸν καὶ θερμόν· ἅπαν γὰρ φυτὸν ἔχει τινὰ ὑγρότητα καὶ θερμότητα σύμφυτον, ὥσπερ καὶ ζῶον, ὧν ὑπολειπόντων γίνεται γῆρας καὶ φθίσις, τελείως δὲ ὑπολιπόντων θάνατος καὶ αὐάνσις.

Babylonia: it is dry, single-stemmed and without side shoots but can still be generated from various parts.

Babylonia is exceptionally fertile and rich in food (*CP* I, ii, 3; *HP* III, iii, 5; VIII, vii, 4). This fertility and richness is cited as the reason why the date-palm grows from its branches there.<sup>143</sup> Babylonia is a particular case, because it is the proper place for the date-palm (*HP* II, ii, 8; III, iii, 5), and that is more than just a curious fact: ὁ δὲ οἰκεῖος [sc. ἀήρ] ἤδη διατελειοῖ τὰ τῆς φύσεως (*CP* II, iii, 7).<sup>144</sup> The difference in climate, soil etc. of different locations makes it possible to causally explain why the date-palm shows this different behaviour in Babylonia.<sup>145</sup> But what is the real nature of the date-palm? The way it is in Babylonia or the way it is in Greece? Only by appealing to the proper place can it be claimed that a plant shows its true nature in one place and not in another. This shows him attempting to get a grip on the variety of plants and their resistance to rigid classifications. His attitude towards cultivation is similar, and to this I now turn.<sup>146</sup>

Without doubt the bulk of the information gathered by Theophrastus comes from cultivated and harvested plants.<sup>147</sup> He pays enormous attention to the cultivation of plants, how to grow them with advice on how to get the best out of them. When he discusses the generation of plants (most of the *CP*), for instance, his chief concern is with how they are *grown*. The distinction between cultivated and wild plants is enormously important, though

<sup>143</sup> *CP* I, ii, 3: ὁ δὲ φοῖνιξ ἀπὸ μὲν τῶν ῥάβδων βλαστάνει χώρας εὐβοσία καὶ εὐφυία πρὸς τὸ θᾶττον βλαστάνειν.

<sup>144</sup> He has just been discussing the date-palm. Cf. *CP* I, ix, 2: ἀπλῶς δ' ὅταν οἰκοῖαν χώραν λάβωσιν οἱ καρποὶ μᾶλλον δύνανται τὰ γένη διατηρεῖν, ὅταν μάλιστα' εὐθενῇ καὶ καλλικαρπῇ τὰ δένδρα.

<sup>145</sup> Cf. *HP* II, iii, 3, where he has been discussing some things that are τέρατα and παρὰ φύσιν: ἤκιστα δὲ ἴσως τὰ τοιαῦτα ἄτοπα διὰ τὸ φανεράς ἔχειν τὰς αἰτίας. ἀλλὰ μᾶλλον τὸ μὴ ἐκ τῶν οἰκείων τόπων φέρειν τοὺς καρποὺς ἢ μὴ οἰκείους.

<sup>146</sup> Aristotle also refers to locality, but does not make as much of it. In the *HA* V, 11, 543b23-31 he discusses the effect of locality on the fertility of fish, referring to plants for comparison.

<sup>147</sup> See e.g. Rihll (1999) 117.

not as important as location.<sup>148</sup> One and the same plant can be radically different depending on whether it is wild or cultivated. This, as well as location, means that plants are more difficult to classify than animals, as almost every single kind and every single individual can be radically different according to place and cultivation. It does not mean, of course, that the plant kingdom is impossible to classify, and we have just seen how Theophrastus applies the notion of proper place to get a firmer grip on the nature of plants that are known to be very different in different places. When discussing the difference between wild and cultivated plants Theophrastus occasionally mentions Hippon the Samian. According to Hippon any plant can be wild or cultivated. It only depends on whether it is treated or not, and there is nothing more to the distinction than that.<sup>149</sup> If wild and cultivated are understood in this way these categories can not be used to classify plants, though they can, of course, be used to causally explain differences among plants of the same kind, assuming the kind can be identified independently. But Theophrastus flirts with the idea that there might be a natural difference between wild and cultivated (HP I, iii, 6):

ἅμα δὲ καὶ φαίνεται τινα ἔχειν φυσικὴν διαφορὰν εὐθὺς ἐπὶ τῶν  
ἀγρίων καὶ τῶν ἡμέρων, εἴπερ ἓνα μὴ δύναται ζῆν ὥσπερ τὰ  
γεωργούμενα μὴδ' ὅλως δέχεται θεραπείαν, ἀλλὰ χεῖρω γίνεται, κτλ.

<sup>148</sup> HP II, ii, 8: εὐλογον δὲ καὶ εἴ τις τὸν παρ' ἡμῶν φοῖνικα φυτεύει ἐν Βαβυλῶνι, κάρπιμόν τε γίνεσθαι καὶ ἐξομοιοῦσθαι τοῖς ἐκεῖ. τὸν αὐτὸν δὲ τρόπον καὶ εἴ τις ἑτέρα προσάλληλον ἔχει καρπὸν τόπω· κρείττων γὰρ οὗτος τῆς ἐργασίας καὶ τῆς θεραπείας. σημεῖον δέ, ὅτι μεταφερόμενα τάκειθεν ἄκαρπα, τὰ δὲ καὶ ὅλως ἀβλαστῇ γίνεται.

<sup>149</sup> HP, I, iii, 5: πᾶν γὰρ καὶ ἄγριον καὶ ἡμερόν φησιν "Ἰππων γίνεσθαι τυγχάνον καὶ μὴ τυγχάνον θεραπείας; HP III, ii, 2: καίτοι φησὶν "Ἰππων ἅπαν καὶ ἡμερον καὶ ἄγριον εἶναι, καὶ θεραπευόμενον μὲν ἡμερον, μὴ θεραπευόμενον δὲ ἄγριον (adding: τῇ μὲν ὀρθῶς λέγων, τῇ δὲ οὐκ ὀρθῶς .)



Some plants entirely refuse to be cultivated and deteriorate when this is attempted. These plants, he goes on to say, we can truly call wild. This implies that there is a degree to being wild and cultivated that is not just a matter of how far along the path of treatment a plant is but on how far it is possible to cultivate it.<sup>150</sup> What is cultivation? ὁ δὲ ἄνθρωπος ἢ μόνον ἢ μάλιστα ἥμερον.<sup>151</sup> As far as ἥμερος goes, man is the extreme case. But man is not a plant by any stretch of Theophrastus' imagination, so how can he be used to fix the reference of "cultivated" in the case of plants? In *HP* III, ii, 2, where he has picked up the debate with Hippon, the point is put rather differently: ὁ δὲ χωριστέον καὶ τὰ μὲν ἄγρια, τὰ δ' ἥμερα λεκτέον, ὥσπερ τῶν ζώων τὰ συνανθρωπενόμενα καὶ τὰ δεχόμενα τιθασείαν. This means that those plants that are with man and receive his culture must be called cultivated, i.e. naturally cultivated.

### 10. Conclusion.

This discussion shows two things. First how flexible plants are. Classifying plants, with the tools available to Theophrastus, is extremely difficult as almost any classification can be upset by change of place and cultivation. This explains why the *HP* is less systematic than the *HA*, without showing Theophrastus less interested in the questions Aristotle was interested in or not as far along in his enquiries as Aristotle was in his. It secondly shows him trying, in the case of place and cultivation, to use these categories as well to

<sup>150</sup> In *HP* III, ii, 1-2, talking about plants that do not take cultivation: μάλιστ' ἂν τις ἄγρια τὴν φύσιν εἴποι. τὸ γὰρ μὴ προσδεχόμενον ἡμέρωσιν, ὥσπερ ἐν τοῖς ζώοις, τοῦτο ἄγριον τῇ φύσει.

<sup>151</sup> Bracketed by Hort.

classify plants and not just causally explain specific features. The true nature of the date-palm is as it is in Babylonia, in its proper climate. Plants can naturally be divided into cultivated and wild.

Λόγοι distinguish themselves by being disputed, and in this way they differ from perception.<sup>152</sup> In addition, the cumulative nature of ἱστορία, which includes corrections of other peoples ἱστορίαι, puts a strain on the theories that must agree with them. Living nature is particularly difficult in this respect by the immense complexity it presents. This both relates to the subject matter itself and to the nature of the information available about it. This is not all together different from the subject enquired into by Herodotus, or indeed the Hippocratics. Or the subject of this thesis: ἱστορία itself. It only remains to pull the threads together and see if there is any system in the madness.

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<sup>152</sup> Cf. *CP* I, xxi, 4, concerning the hot and the cold as theoretical entities.

## Conclusion

In the four studies this dissertation is composed of I have only done the material partial justice. The overall effect may be one of confusion rather than clarity and although confusion is not my aim, establishing the complexity of meanings and uses of ἱστορία is important. ἱστορία and cognates are used by a number of writers in various contexts and with different meanings. This should not be a surprising conclusion though a remarkable number of scholars see a single core meaning — whatever that is — of ἱστορία in play every time the word and its cognates are used. In this concluding chapter I will briefly, first, discuss the different possible meanings of the ἱστορ- vocabulary as it reveals itself in the studies and, second, explore the common threads in the history of the concept and indicate the most important moments in its minting process. It should already be clear, but needs to be spelled out explicitly, that the concept of ἱστορία is created in the melting pot of fifth and fourth century debates about the nature and acquisition of knowledge.

## 1. Variety.

There is first the variety of words that belong to the ἱστορ- vocabulary:

ἵστωρ; ἱστορεῖν; ἱστορία/η; ἱστορικός; ἱστόριον.

My studies have been based on analyses of the uses of these terms,<sup>1</sup> with focus on the period up to and including Theophrastus. In chapter II, on reported knowledge, I include the Hellenistic Empiricists, as they are a particularly interesting example of how technical a term it became. There is a tendency in classical scholarship, when it gets into exploring individual words, to look back to a core meaning that is supposed to be found in the stem and the root. This is then used to explain later uses and meanings of key terms. In the case of ἱστορία these are the stem ἵστωρ and the root \*w(e)id-. There are good reasons to connect \*w(e)id- with seeing but applying this to the earliest uses of ἵστωρ in ancient Greek literature does not add up. Homer (*Il* XVII 501, XXII 486) uses ἵστωρ of a person who has the special position within society to arbitrate in a dispute and Hesiod (*Erga* 792) seems to use it in a more general sense of "wise" or "knowing". Bacchylides (IX 44 Snell/Maehler) has ἱστορες meaning "skilful" (with a spear) and Heraclitus (DK22B35) also seems to use it in a general sense of knowledgeable or wise, though many scholars translate ἱστορες in frg. 35 as "enquirers".

These earliest uses of ἵστωρ do not confirm that there is an idea of seeing carried from the root through the stem and to the branches. The uses of the ἱστορ- vocabulary in the tragedians is another indication that seeing is

<sup>1</sup> There are in addition later derivatives, like ἱστόρημα, ἱστορητέον, ἱστόρισμα and ἱστοριώδης as well as compounds with γραφεῖν (ἱστοριο-γραφεῖν, -γραφία, -γραφικός and -γραφος).

not an essential element in its uses. The verb ἱστορεῖν is common in the tragedians in the meaning "to ask", which is also the meaning of the verb in Herodotus. Ἰστωρ does not, therefore, seem essentially tied to the idea of seeing. Other scholars, still looking for the core in ἱστορία, have abandoned the root and seized upon the meaning of Ἰστωρ in Homer: "arbitrator". The aim is primarily to understand the use of ἱστορίη in the opening words of Herodotus' *Histories*. Why does he present his work as a ἱστορίη? This is an intriguing and interesting question, all the more because the use of ἱστορίη in Herodotus' proem seems to be of momentous importance for the subsequent history of the concept. But even if we were to accept that the idea of arbitration is present in the concept as used by Herodotus, and I do not think we should, it would only work as a partial explanation of the use of the concept in Herodotus' proem. It would not give a key to the concept as such, not even to the use of the ἱστορ- vocabulary in Herodotus, let alone Aristotle or anyone else.

Another much discussed idea is the empirical spirit of the Ionian enlightenment, where "philosophers" and "scientists" approached the subject of nature through empirical investigations. Or so it is claimed. This is frequently associated with ἱστορίη, enquiry, and tied to the root \*w(e)id- and the core meaning of "seeing". But the early uses of Ἰστωρ or ἱστορεῖν pose serious problems for this interpretation, as noted above. A drastic solution, clinging to the model of a root with a stem and branches, is to insist on two (why not more?) different roots to homonymous words. This only indicates how desperate the search for origins can be. Respecting the variety in the evidence for ἱστορία should make us look for different models.

I argued in chapter III that ἱστορία/η in Herodotus, *On Ancient Medicine* and the Empiricists refers to reported knowledge. There is great

variety in the nature of the knowledge reported. It includes direct observations, common knowledge ("facts") and abstract arguments. In Herodotus it seems to have more to do with privileged access than direct experience, while in *On Ancient Medicine* it is reported knowledge based on the experience of medical practitioners, in the past and the present. The Empiricists debated among themselves what precisely ἱστορία was, and the candidates were reported information, true or false, and reported αὐτοψία, always true. In Aristotle's and Theophrastus' *Historiae* ἱστορία was reported information in the more general sense, not strictly speaking αὐτοψία written down but also the *endoxa*. From Herodotus to the Empiricists, through *On Ancient Medicine* and Aristotle, there is, in addition, increased reliance on writing as a medium for ἱστορία.

## 2. *Minting.*

There is more to ἱστορία than just a variety of different meanings and uses. In all this material the contours of a tree begin to emerge. But this is not the tree of traditional linguistics growing from *a root*. It is a tree as they should be: with a complex nexus of roots that grow together into a stem or stems. In the earliest material I have investigated there does not seem to be a clear conception of what ἱστορία and the ἱστορ- vocabulary covers. This is gradually hammered out in the developing debates about the nature of knowledge, both within and between the competing groups and individuals. Some moments in this history are more important than other and the effect of the proem of Herodotus can hardly be exaggerated. Herodotus was early well known for his work and the fame lasted. It became irretrievably associated with ἱστορίη and ἱστορίη with it. This does not mean, of course, that all uses

of the ἱστορ- vocabulary were from then on inseparable from the *Histories* of Herodotus.

By the fourth century ἱστορία becomes a "fundamental concept" in the sense of Koselleck. There is ἱστορία and there is φιλοσοφία. And even though individuals can disagree on the meaning of these terms, as well as on the meaning of any term they use, they have a fixed place in the discourse about the nature of knowledge. An indication of how fixed ἱστορία had become is the dominance of the word ἱστορία and the disappearance, for a while, of the verb ἱστορέω. 'Ιστορία is a category referred to. There is also ἱστορία and ἱστορία περί one thing or another. Theophrastus has no problems referring to his *HP* as the ἱστορίαι, plain and simple, while Aristotle is not as clear. He refers to the *HA* as the ἱστορίαι but he often qualifies this with a περί clause or some other identifying marker, which either refers to animals or to nature. 'Ιστορία περὶ φύσεως was a well known category, at least from the time of Plato, but it was mainly used in historical contexts, i.e. to describe the activities of some of the earliest Greek philosophers. It is possible that the difference between Aristotle and Theophrastus regarding the "title" of their *Historiae* is one of character, but it is at least as likely that the idea or concept of ἱστορία concerning nature has been sharpened from one to the other. This is minting in practice.

Instead of looking back to an "original" meaning of ἱστορία to explain its later uses we see a concrete concept being hammered out over time. Not all words and phrases get this treatment. 'Ιστορία is undoubtedly among the chosen few, and it already was in the fourth century for the ancient Greeks.



## 3. 'Ιστορία

One of the most striking similarities in the various uses of ἱστορία is that between Herodotus and Aristotle. Not only does Aristotle's practice of ἱστορία in the *HA* seem more akin to Herodotus' practice than is commonly recognised. The statements of Herodotus and Aristotle on the role of ἱστορία/ἡ show a curious resemblance in vocabulary. Herodotus presents, in the proem, an ἀπόδειξις of ἱστορίῃ, which turns out to be an enquiry into causes (δι' ἣν αἰτίῃν), which is strikingly similar to how Aristotle presents ἱστορία in the *HA* (I, 6, 491a7-14). But even though they use the same words they do not use them in the same meaning. Aristotle's ἀπόδειξις is demonstration, Herodotus' ἀπόδειξις is presentation, and this is telling for the difference between the two uses of ἱστορία.

Herodotus and Aristotle both claim ἱστορίῃ/α for what they are doing. Some of the Hippocratics as well as the Empiricists did as well. Others used ἱστορία to name the kind of enquiry or knowledge they *contrasted* their own kind of enquiry and knowledge with. The best known of these is the autobiography of "Socrates" in Plato's *Phaedo*. For Socrates ἱστορία had too limited aims. It only described physical conditions and did not tackle any of the important "why" questions. He therefore turned towards *logoi* and *hypotheses*. The author of the *VM*, who is an advocate of ἱστορίῃ, attacks the "philosophers" (he names Empedocles) precisely for relying on *hypotheses* in dealing with hidden things. He regards his own method of ἱστορίῃ as much superior because it is based on experience, cumulated over time. The Empiricists had a more radical version of this position as they wanted to do away with the hidden in general. Herodotus uses similar criticisms of some of those he attacks. The source of the Nile has been inadequately enquired into. The same goes for the story of Heracles and the fate of Helen. By enquiring,

asking, he believes himself to have found out more about the facts of these matters than his predecessors, and based on these "facts" he can make better guesses. Speculation and hearsay are attacked by these authors, as well as relying on anything other than direct observation or observational reports, and *ιστορίη* is proposed instead.

On the other hand, those who attack the principle of *ιστορία* do it either in terms similar to Socrates, i.e. in terms of its limited aims or lack of demonstrable conclusions, or as contrasted with proper autopsy. The debate among the Empiricists on whether *ιστορία* was autopsy in written form or just a convincing account turns on this contrast and the relative status of *ιστορία* and autopsy. Aristotle fits the dichotomy of those who like and those who dislike *ιστορία* with the twist that he wanted the best of both. '*Ιστορία* was inferior to philosophy, in that it did not deal with the general and its contents could not be demonstrated. But he still wanted it to serve philosophy by supplying the necessary facts to be demonstrated in his theoretical works, but in order to make it demonstrable he has to make it describe not the individual but the species the individual is a specimen of.

'*Ιστορία* is description of the world, but what world? Is it only the world of experience, as some of the Empiricists wanted, or is it any report, even a dubious one, and the *endoxa*, as with Aristotle and Theophrastus? Theoretically the distinction is clear, but in practice the boundaries between properly reported autopsy and fabrications, not to mention everything in between, is difficult to draw.

In some cases *ιστορία* is (or in the case of the embryological treatises discussed in chapter II, *ιστόρια* are) supposed to convince by itself, but in other contexts it is and can only be a first step in a process that eventually is supposed to be a convincing account. Aristotle is not satisfied

with the mere fact. He must also know why. While for Herodotus it is enough to *present* the ἱστορίη, already established by his enquiry, Aristotle has to *demonstrate* it.

## Abbreviations

Titles and authors of Greek works are abbreviated according to the LSJ.

- B            *Collection des Universités de France publiée sous le patronage de l' Association Gouillaume Budé.*
- CAG        *Commentaria in Aristotelem Graeca*, ec. Academia litterarum regia Borussica, Berlin (1882–1909).
- CMG        *Corpus Medicorum Graecorum*, Berlin, Copenhagen and Leipzig.
- DK         *Die Fragmente der Vorsokratiker*, edd. H. Diels and W. Kranz, 6<sup>th</sup> ed Berlin (1951).
- Eijk        *Diocles of Carystus. A Collection of the Fragments with Translation and Commentary, vol. I: Text and Translation*, ed. Philip J. van der Eijk, Leiden, Boston and Köln (2000).

- F            *Early Greek Mythography*, vol. I: Texts, ed. R.L. Fowler,  
Oxford (2000)
- FGrH        *Die Fragmente der griechischen Historiker*, ed. F. Jacoby,  
Berlin and Leiden (1923–).
- FHS&G      *Theophrastus of Ephesus. Sources for his Life, Writings,  
Thought & Influence*, edd. W.W. Fortenbaugh, P.M.  
Huby, W.R. Sharples and D. Gutas, Leiden, New York  
and Köln (1992).
- H            *Claudi Galeni Pergameni Scripta Minora*, vol. III, ed. G.  
Helmreich, Leipzig (1893).
- IG           *Inscriptiones Graecae Consilio et Auctoritate Academiae  
Borussicae Editae*.
- K            *Claudi Galeni Opera Omnia*, ed. C.G. Kühn, Leipzig  
(1821–33).
- KRS        *The Presocratic Philosophers*, edd. G.S. Kirk, J.E. Raven  
and M. Schofield, 2<sup>nd</sup> ed Cambridge (1983).
- L            *Oeuvres complètes d' Hippocrate*, ed. E. Littré, Paris (1839–  
61).

- LSJ      *A Greek-English Lexicon*, compiled by H.G. Liddell and R. Scott, revised and augmented throughout by H.S. Jones et. al., Oxford (1996).
- PEG      *Poetarum Epicorum Graecorum testimonia et fragmenta*, Pars I, ed. A. Bernebé, 2<sup>nd</sup> ed Leipzig (1996).
- W<sup>2</sup>      *Iambi et Elegi Graeci: ante Alexandrum Cantati*, vol. II, ed. M.L. West, 2<sup>nd</sup> ed Oxford (1992).

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<sup>1</sup> I have not seen this dissertation, but if Zoepffel (1975) 8 n 13 is to be believed Keuk has nothing original to say on the "Ancient" part.

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