

Early Greek Accounts of Aesthesis

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1. Introduction

Like psychologists and philosophers today early Greek thinkers were concerned with understanding the nature of perception. The term they used – which is widely translatable and encompasses a number of meanings¹ – was αἴσθησις (*aesthêsis*). What interested them, amongst other things, was how we are able to perceive, how the sensory organs are composed and what the nature of the relationship is between the senses and objects of perception. By far the most complete ancient account of *aesthêsis* is presented by Aristotle in his *De Anima*. The work is concerned with the ontology and nature of the *psuchê*² and having given a summary of his predecessors' views and a preliminary account of his own Aristotle moves on to explain its particular 'powers' or 'faculties' (δυνάμειον). He divides these into nutrition, appetite, sensation, locomotion and understanding (*DA* 2.3, 414a 29-31), considering each

¹ As Lloyd has noted, the term can mean a number of things including 'feeling', 'consciousness', 'self-consciousness', 'sense-perception' and can even mean 'appearance' or 'that which appears'. In this latter definition it shares its meaning with the term ψαύω. See *Magic, Reason and Experience* (Cambridge, 1979), pg. 129-30.

² Much has been written about the definition this term 'ψυχή' (*psuchê*). The word 'soul' fails to capture its full meaning, for it encompasses many ideas such as mind, consciousness, life-force, motion and the list goes on. Moreover, the depth and span of Aristotle's concerns means it is impossible to translate the word into one term. As Nussbaum writes of the purpose of *De Anima*, "It is a metaphysical inquiry into the ontology of *psuchê* and of *nous*; it is philosophical psychology, a general analysis of the activities of *psuchê*; it is philosophical bio-psychology, an investigation of the teleologically organized functions that are common to living bodies." *Essays on Aristotle's De Anima*, (Oxford, 1995), pg. 7. I will use the term *psuchê* from here on out with a view to preserving these many meanings.

respectively. It is in elucidating the nature of sensation that his views on *aesthêsis* arrive.

The account is centred on his doctrine of hylomorphism. Perception, he claims, is a kind of change or alteration (*DA* 2.5, 416b 32-35) whereby we receive the form of an object but not its matter. These forms- sounds, colours, tastes and so on- impress on our sensory organs (an act which he likens to the imprint of the signet ring into wax [*DA* 2.12, 424a 17-21]) and in this taking place the organ changes to match the form it perceives. It is owing to this change caused by the impression of a form that we are able to perceive. Aristotle was interested in showing that perception is an *active* process, a reciprocal relationship between sense and object. We do not passively receive information from our surroundings but an active change takes place in the organ of sense each time we apprehend the new form of an object. The account would prove seminal and along with much of *De Anima*, his ideas on perception would go on to form the grounds of a great deal of subsequent scholastic thought- from the philosophy of mind to epistemology³. It is no doubt due to the scrupulousness and comprehensiveness of his enquiry that much of the literature on the origins of psychology has held him to be the earliest forefather of the discipline⁴.

It is important to appreciate that Aristotle emerged from a context with a rich history of work, a lot of which has been lost, on the nature of *aesthêsis*. As Hicks writes,

Aristotle himself, though he may be claimed as in some sort the founder of a science of psychology, comes at the end of a period of development and, to understand him aright, we must not only take account of the thinkers who preceded him, but also seek the humble origins of their speculations in the crude conceptions of a distant past.⁵

³ Nussbaum writes that Thomas Aquinas' 13th Century commentary on the work was what gave impetus to its circulation and discussion amongst European and Arabic philosophical circles. For a discussion of the translation and circulation of the text cf. *Essays on Aristotle's De Anima*, (Oxford, 1995) pgs. 1-7.

⁴ See titles by Vidal, Watson, Everson pgs. 2-6 and Mandler pgs. 17-38 in the bibliography.

⁵ *Aristotle De Anima* (Cambridge, 1907), pg. xviv.

When we turn to pre-Aristotelian (and pre-Platonic) accounts of perception we find that by far the most trenchant and insightful views do not come from philosophers but from medical writers such as Alcmaeon and the authors of the Hippocratic corpus. They were unique in that they approached perception not by way of metaphysics or epistemology but from the grounds of physiology and anatomy. Indeed, it is not entirely accurate to hold the two spheres of enquiry separate as they are today. For, as many⁶ have noted, the interests of the 5th Century BC physicians and philosophers were very much akin. The term 'physician' throws light on this. Derived from the Latin *physicus* or 'student of nature'⁷- it is an apt title for the early medical writers and practitioners who were not only concerned with naturalistic accounts of the body and disease but with nature more generally as well. They were of the view that the former must always be understood by way of the latter.

Aristotle himself notes the importance of keeping the two enquiries intertwined. In the opening page of *De Sensu*⁸ he makes clear the importance of physicians who are philosophically inclined for they begin with physiology- an area from which a great deal of philosophical insight can be derived (*DS* 436a19- b1). It is my intention to consider some of the early medical accounts of *aesthêsis* and to throw light upon the ways they influenced Aristotle's account. Their approaches to perception by way of a rational and materialist understanding of the body played an important part in the 5th century BC turn from mysticism and theologically inspired accounts to more rational and empirically grounded enquiries. Such thinkers are not only of interest for what they influenced, though. In their own right they raised questions and provided accounts that would reorient the way the ancients understood nature, the body and indeed perception. So much so that I will argue that it is paramount for scholars to give due weight to pre-Aristotelian ideas of perception and physiology, as much as they do to Presocratic thought in philosophy and cosmology.

⁶ See especially titles by Jouanna pgs. 281-2, van der Eijk pg. 8, Lloyd (1975), (1979) pg. 37 & (1991) pgs. 70-100 and Longrigg pg. 434 in the bibliography.

⁷ For an account of this definition and how it applies to the early Greek medical writers cf. O. Temkin, 'Greek Medicine as Science and Craft', *Isis*, Vol. 44, 1953, Pg. 215

⁸ T. Taylor, *The Works of Aristotle*, Vol. XXIV (Somerset, 2003).

2. Alcmaeon

One of the earliest Greek accounts of *aesthêsis* is provided by Alcmaeon, a medical writer from the Magna Graecia port of Croton who is said to have worked and written in the first half of the 5th Century BC⁹. Many of the ancient sources are in disagreement about his life, profession and writings. We are told by Diogenes Laërtius that Alcmaeon was a physician and that he ‘heard Pythagoras’ (DK 24 A1). Whereas the later physician Galen (DK 31 A2), while agreeing on his Pythagorean influence, does not believe him a medic and cites him amongst Parmenides and Empedocles as a philosopher and writer on Nature (περὶ φύσεως). In his *Lives* Plutarch informs us that Alcmaeon developed an early naturalistic account of disease which he claimed to be derived from an imbalance of the opposites, “moist and dry, cold and hot, bitter and sweet and the rest” (DK 24 B4). And Chalcidius (DK 24 A10), in his commentary on Plato’s *Timaeus*, writes that Alcmaeon was the “first to dare to approach the excision of the eye.”¹⁰ The picture painted by such sources shows an individual interested in topics of nature, medicine and anatomy and in approaching them through rational, empirical and observational methods.

Alcmaeon has been omitted from a number of recent collections of Presocratic fragments¹¹. This is no doubt because in the Ionian or more general Presocratic

⁹ The dates of Alcmaeon’s work and writing are contested. The crux of the debate is whether Alcmaeon could have written in the 6th Century BC and a lot rests on the question of his affiliation with the Pythagoreans. For good summaries of the debate see titles by Guthrie pgs. 357-9, Lloyd (1991) pgs. 167-8 and Harris pg. 4-5 in bibliography.

¹⁰ “*demonstranda igitur oculi natura est, de qua cum plerique alii tum Alcmaeo Crotoniensis in physicis exercitatus quique primus exsectionem adgredi est ausus*”

¹¹ See works by Graham; Cohen, Curd and Reeve; Kirk, Raven and Schofield in the bibliography. All omit Alcmaeon from their commentaries on the Presocratics.

sense, he was not a philosopher and, as Heidel has noted¹², despite often being called a Pythagorean, he did not seem to obviously affiliate with any group of natural philosophers. However, when we observe some of the preserved fragments and doxography on Alcmaeon's work we not only find an original thinker¹³ but one very much concerned with some of the problems in cosmology and ontology that occupied the ancient *Phusikoi* and *Phusiologoi*. But our concern, however, will be his thoughts on medical matters for it is here that his views on *aesthêsis* appear.

It is the doxographers that preserve the most extensive account of Alcmaeon. Theophrastus, in his commentary on Aristotle's *De Sensu* (DK 24 A5), writes,

Amongst those who explain sensation by dissimilars, Alcmaeon begins by clarifying the difference between men and lower animals. Man, he says, differs from the others in that he alone has understanding, whereas they have sensation but do not understand: thought is distinct from sensation, not, as it is for Empedocles, the same.

He then proceeds to each sense separately. Hearing is through the ears because they contain a void, which resounds. Sound is produced in the cavity, and the air echoes it. A man smells with his nostrils, as he draws the breath up to the brain in the act of breathing. Tastes are distinguished by the tongue which being warm and soft melts the object by its heat, and owing to its porous and delicate structure receives and transmits the flavour. The eyes can see through the water surrounding them. That the eye contains fire is evident, for the fire flashes forth when it is struck, and it sees by means of the bright element and the transparent when the latter gives back a reflection, and the purer the element is the better it sees.

All the senses are in some way connected to the brain, and for this reason they are incapacitated if it is disturbed or shifted, for it obstructs the passages through which the sensations takes place.

Concerning the mode or the organs of touch he has nothing to say. This then is the extent of his explanations. (trns. Guthrie¹⁴)

Alcmaeon begins by distinguishing perception from intelligence, using the term '*syniêmi*' (συνίημι) for the latter. It is because men have *syniêmi* that they are distinct from animals, which only have the capacity for perception. *Syniêmi* is widely

¹² Cited in W.K.C. Guthrie, *A History of Greek Philosophy, Vol. 1* (Cambridge, 2000), pg. 341

¹³ See works by Miller pg. 169, Hankinson pg.196, Longrigg pg. 48 and Guthrie pg. 359 in the bibliography. All respectively note the striking originality of Alcmaeon's ideas.

¹⁴ *A History of Greek Philosophy, Vol. 1*, pg. 347

translatable though in this instance it is best understood as 'to unite' or 'to bring/gather together'. So perhaps the best way to understand this is that because men have the ability to unite or gather together their perceptions, they are distinct from other lower creatures. The particular role of intelligence, then, is one of gathering or uniting. Moreover, we see how he makes an important contribution to the ancient debate over where the intellect or mind are seated in that he locates intelligence in the brain. Like the Hippocratic writers after him (and unlike Empedocles and Aristotle), Alcmaeon believed intelligence to derive from the head and not the heart. All of the sensory organs are linked to the brain through passages (πόροι) and it is owing to this neurological grounding- and our understanding that comes from it- that we are able to perceive and gather together our perceptions.

It is clear from the Theophrastus fragment that Alcmaeon is interested in locating all thought and perception in a materialistic understanding of the body. We see this best in his elucidation of the nature of each sense. Hearing occurs because of a cavity in the ear, taste because of the porous and delicate nature of the tongue and sight because the eye is made up of a combination of the elements of water and fire. The start point is always the body and from here he works up its particular mental and perceptual functions. This anatomical focus shows how Alcmaeon approached his subject matter from a new perspective, one distinct from a lot of previous accounts which tended to favour speculative philosophy and abstract theorising. Guthrie notes,

Alcmaeon's view points to this preference for the concrete, a solid basis of observation, and dislike of airy hypotheses and over-simplification. He had no use for the contemporary fixation on a single *arche* [beginning/origin/cause] to which everything could be reduced.¹⁵

Alcmaeon's account differs from those previous in that he was uninterested in things that could not be empirically explained and accounted for. He does not wish to understand perception or intelligence as metaphysical idea or reduce them in any

¹⁵ *A History of Greek Philosophy, Vol. 1*, pg. 345

way. He wants to provide a clear and careful account of *aesthêsis* by way of physiology and empiricism, that is, by way of medicine. Interestingly, as Jones¹⁶ has noted, he does apply the concept of the opposites in his account of disease, believing the imbalance of opposites to cause disease- an excess of heat to cause fever and too much moistness to affect the brain. While this is undoubtedly a refashioning of prior philosophical accounts¹⁷, it is turned towards the practical and pragmatic concerns of medicine and pathology.

The concept of opposites is not the only one Alcmaeon seems to have inherited. His account of visual perception is centred on the doctrine of the elements which has its clearest expression in the writings of Empedocles¹⁸, with whom, it has been said¹⁹, Alcmaeon's writings were contemporaneous. So to fully understand the role the elements play in Alcmaeon's account it is worth having recourse to the work of this poet, philosopher and, as some have claimed²⁰, physician. In his *De Sensu* (437b26-438a2), Aristotle provides us with Empedocles' metaphorical poem on sight. He (Empedocles) holds that just as the fire in the traveller's lantern is sheltered by an outer casing from the gusty winter winds (ἀνέμων), the outside of the eye- made up of a transparent compound of earth and water- protects the fire within through which we perceive. Like Alcmaeon, it is in Theophrastus' doxographical writings that Empedocles' ideas on perception are most fully presented. Here (DK 31 A86) we

¹⁶ *Philosophy and Medicine in Ancient Greece* (Baltimore, 1946), pgs. 4-5.

¹⁷ Anaximander, Heraclitus and Empedocles all expounded variants of the idea that the universe was comprised by opposites (hot/dry, love/strife, good/evil and so on). The view was no doubt one Alcmaeon was familiar with.

¹⁸ It is in a fragment from Simplicius' *Physics* (DK 31 B17) that Empedocles' account of the elements is most fully preserved.

¹⁹ C.R.S Harris, *The Heart and the Vascular System in Ancient Greek Medicine* (Oxford, 1973), pg. 4

²⁰ Many of the ancient sources hold Empedocles to be a physician. Diogenes tells us Satyrus believed him to be a physician as did Heraclides (DK 31 A1). In his *Natural History* Pliny writes that Empedocles supported a school of medicine in Sicily which was called an empirical school due to its experiments (DK 31 A3). The anatomist and writer Galen further attests to him being a physician, holding that he practiced in Sicily with Philiston and Pausanias (DK 31 A3). Both Diogenes (DK 31 A1) and the Suda (DK 31 A3) inform us that he wrote a six hundred line treatise on medicine, as well as his more famous works *On Nature* and the *Purifications*.

learn that he believes the eye to contain passages or pores (πόροι) through which the rays of fire emanate and into which visual information passes. This reciprocal passing out of fire and reception of visual information through water is the reason we are able to see. Moreover, the other sensory organs contain the same pores so that colours, sounds, smells and so on *flow out* (ὑποπορεύν²¹) from objects and into the pores of the sensory organs.

As Longrigg has noted, there are some striking similarities between Alcmaeon and Empedocles' accounts²² and Diels suggests that it is likely Empedocles derived his ideas about the structure and composition of the eye from Alcmaeon²³. For both thinkers, the elements play a central role in perception. The eyes contain fire and seeing is the result of rays from this fire leaving the eye and perceptible information entering through the transparent element of water²⁴. Alcmaeon is more explicit on this writing that "the purer the element the better it sees". For him, the way the elements are admixed determines our capacity to perceive, the more water in the eye the better we receive visual information and with too little water or too much of an impure element comes poor sight. It is here, in his concern with understanding both why some have better sight than others and why the senses can become disrupted or impaired, that we see a thinker concerned with medical explanation. The account of fire shows this as well. That there is fire within the eye is evident because when the head is knocked the fire moves to the fore and a flash appears in our vision. Alcmaeon is concerned with understanding what causes impairment or injury and how the body responds to it and uses the doctrine of the elements as a backdrop for doing so.

²¹ Graham translates this as 'effluences'. Cf. *The Texts of Early Greek Philosophy*, Vol. 1, (Cambridge, 2010), pg. 401.

²² Longrigg, J., *Greek Rational Medicine* (London, 1993), pg. 64.

²³ Cf. I. Wachtler, *De Alcmaeone Crotoniata*, (Leipzig, 1896), pg. 49.

²⁴ Beare believes this to be an active/ receptive relation: "Thus the fire would represent the 'active' force of vision, while the water would serve to bring the object seen home to the eye itself." *Greek Theories of Elementary Cognition From Alcmaeon to Aristotle* (Oxford, 1906), pg. 13.

Central to both Empedocles and Alcmaeon's accounts is the fact that the body (σῶμα) - and its sensory organs- are constituted by the same material as the surrounding world. This idea both unites and sunders their accounts. While they agree on the elements they disagree on how exactly they determine the way we perceive the world. Empedocles offers the idea of *like perceives like*, that is, that we are able to perceive because the elements in the sensory organs pick out the same elements in our surroundings. So the fire in the eye perceives the fire around it, the air perceives the air, the earth perceives the earth, and so on. It is owing to this matchup of elements that perception can occur. Whereas- as the Theophrastus fragment makes clear- this was not the case for Alcmaeon who holds that perception takes place between 'dissimilars'. This is never fully explained but it seems to mean that while the eye is an amalgam of elements, this in no way determines how and what we perceive. The eyes, nose, tongue and so on perceive all things, irrespective of their own composition.

So while there is continuity between Alcmaeon and Empedocles' accounts, they both part ways as well. The materialism that underpins both their ideas of *aesthêsis* would have a significant influence on subsequent accounts and nowhere is this more evident than in the writings of the Hippocratic corpus. What such later writings show is that while in his focus on physiology and the elements Alcmaeon had approached perception in a markedly empirical way, he had not yet reached the pure empiricism of the later Hippocratic writers.

3. Hippocrates

In the Hippocratic corpus it is in the texts *The Sacred Disease* and *The Fleshes* that we find the fullest accounts of *aesthêsis*. The two accounts are different in both style and approach which hints at the fact they were composed by different authors, though they do show some continuity. The overall aim of the *The Sacred Diseases* is to provide an account of the causes and cures of epilepsy which moves away from the mystical and religiously inspired accounts that had previously been offered. The

author calls such accounts the work of “magicians, purifiers, charlatans and quacks” (*Hipp.* Littré VI. 354. 13-14) and looks to pave the way for a new approach based on careful observation and diagnosis. This empirical examination into diseases of the mind and body was deeply indebted to Alcmaeon and in *The Fleshes* we see how such methods are applied to areas much broader than medicine and pathology. As Jouanna notes²⁵, despite its name *The Fleshes* is in essence a work of medicine though it is also approaches topics such as broad as what we would now call anthropology and cosmology. The author of the treatise insists that the former must, along with all medical accounts, be built upon an understanding of the latter and it is in proceeding in such a manner that we see the naturalism and materialism that had been the theme of Alcmaeon’s writings.

Chapter 17 of *The Sacred Diseases* contains most of the authors view on perception. The central idea- most likely inherited from Alcmaeon- is that the brain is the seat of intelligence and as such is the basis of perception (*Hipp.* Littré VI. 386. 15-19). As for the composition of the body the doctrine of the elements plays a key role again. The elements constitute the body and the organs of perception and it is the imbalance of these elements which causes us to become ill. Madness is the result of the brain becoming overly moist (Littré VI. 388.6) and that the brain is the basis of perception is evidenced by the fact that when it is affected by moistness perception is disrupted as well.

When the brain is abnormally moist, of necessity it moves, and when it moves neither sight nor hearing are still but we see or hear now one thing and now another. (*Hipp.* Littré VI. 388.6-9, trns. Jones)

Yet while the lack of parity between the elements causes illness and disrupts our ability to perceive, it is owing to some elements that we are able to perceive at all.

²⁵ *Hippocrates* (Baltimore, 199) pg. 391-2

The author holds that air is that which ‘gives intelligence’ (*Hipp.* Littré VI. 390. 10). When we perceive we perceive air²⁶ and the brain interprets these perceptions.

Eyes, ears, tongue, hands and feet act in accordance with the discernment of the brain; in fact the whole body participates in intelligence in proportion to its participation in air. (*Hipp.* Littré VI. 390. 13-15, trns. Jones)

There is no exact detail as to how it is that air gives us intelligence or how the senses perceive and gain information from it. It is important to note that the author is not interested in delving into questions of epistemology. Their focus is pathology so the account of perception is derived from and secondary to a physiological understanding of the body. With this intention in mind, the author centralises the brain as the seat of both perception and intelligence and it is to the brain that all of the senses can ultimately be traced back.

Like Alcmaeon’s writings, the Hippocratic works are omitted from most of the work on the Presocratic fragments for they are deemed to offer little by way of philosophical or cosmological insight. Yet turning *The Fleshes* we see that this is perhaps unfair²⁷ ²⁸. The work is precisely concerned with understanding the nature and composition of the κόσμος in light of which the body is considered. The elements are those things which make up both and while the element of air is again central, the account is slightly different to that in *The Sacred Disease*. This time it is more particularly heat (or hot air) which is responsible for intelligence and perception,

²⁶ This view of perception was shared by a number of thinkers most notably Diogenes of Apollonia. See Theophrastus’ commentary on his writing (*DK* 51A 19).

²⁷ Jouanna writes “The Hippocratic treatise is of inestimable value, for the treatises of the pre-Socratics either have been lost or are preserved only very fragmentarily, and this constitutes the sole wholly preserved example of the inquiry into nature.” *Hippocrates*, pg. 277.

²⁸ Similar to the above footnote, Lloyd notes, “Hippocrates’ treatises include many discussions of problems that are raised in natural philosophy, notably such questions as the fundamental constituents of physical objects in general or of the human body in particular.” *Magic, Reason and Experience*, pg. 146-7.

I believe that what we call heat (θερμόν) is in fact immortal, that it perceives all things, and sees, and hears and knows all that is and all that will be. (*Hipp.* Littré VIII. 584. 9-12)

The author is not interested in merely restating the doctrine of the elements, they want to elucidate the particular nature of each- in this case air- with a view to understanding how they rule and determine perception. This heat is in some sense omniscient though it is not entirely clear what the statement 'heat perceives all things' means. We are left unsure as to whether it is the elements fire and water which are responsible for intelligence and perception or whether this heat is internal or external to the body. It may be reasonable to conjecture that the element of fire play a role as it does in the accounts of Alcmaeon and Empedocles.

We may understand this better if we turn to see the author's account of the nature of each sense. Having stated that heat is the element through which perception takes place the author moves on to respectively analyse each of the sensory faculties and explicates the constitution and functioning of each. As with Alcmaeon, it is the composition of the sensory organ which determines the nature of perception and our capacity to perceive. We are able to hear because the "openings of the ears lead to a bone (ὄστέον) that is hard and dry like a stone" (Littré VIII. 602. 19-22). Sounds are directed into the hollow cavern of the ear, where they resound off this bone. We are able to smell because the brain²⁹ - which is itself moist- "perceives the smell of dry things, by drawing the odour along with air through the bronchial tubes (βρογχίων) which are dry; for the brain extends towards the hollows of the nose." (Littré VIII. 604. 7-10). And we are able to see because a membrane descends through the eye from the brain- "these transparent membranes situated in front of the part of the eye that sees are many...it is in this transparency that light and all bright things reflect; through the agency of this reflection, then the person sees." (*Hipp.* Littré VIII. 604. 21- 606. 9, trns. Potter).

²⁹ ἔνθα - This is usually translated as 'brain', as Potter renders it, though more literally it means 'that which is in the head'.

The account proceeds by way of an empirical examination of the body. It is not speculative but rooted in observation and insofar as empiricism is the methodological preference, these accounts of *aesthêsis* in the Hippocratic corpus share striking similarities with Alcmaeon's. Yet the authors seem keen to take that empiricism one step further. While the elements are paramount, an understanding of the body is more so and it thus that we have a focus on the exact way in which the bronchial tubes bring in air, the transparent membranes are responsible for vision and the bones of the ear- described in detail as hard, dry and of a certain shape- are formed in such a way as to allow for sounds to resonate. This is a work based on pure anatomy and the doctrine of the elements is subordinate to this somatic analysis. So the sensory organs are not a particular ratio of fire, water and air but are bone, membrane and bronchial tubes. Even such lexicon, unseen in Alcmaeon's work, indicates an evolved interest in categorising and naming parts of the body with a view to understanding its functioning and how and why we become ill. In light of this, the Hippocratic account of perception acknowledges both the complexity and irreducibility of perceptual processes which are recognised as offshoots of the functioning of the body organism and the brain that is the centre of intelligence.

4. Conclusion

The accounts of *aesthêsis* offered by the early medical writers were unique and their views on nature, the body and its mental and perceptual functions would have a significant influence on many subsequent thinkers. Nowhere is this influence more evident than in Aristotle's treatise on the soul. Hicks³⁰ believes the physical doctrines of Anaxagoras, Leucippus and Democritus to have had the greatest effect on

³⁰ Aristotle *De Anima*, pg. xxii

Aristotle's work. Others³¹ have claimed that his views of perception stand alone and that he had inherited little from previous accounts in formulating them. While it is clear that *De Anima* offers a great deal of original insight, it would be remiss to neglect the deep influence that the medical writers had on the work. There is an unequivocal continuity between Alcmaeon's understanding of vision as the emanation of fire and reception of perceptible content and Aristotle's idea of perception as a reciprocal relationship between the perceiver and object. While he does not account for this by way of the elements, Aristotle has clearly inherited the idea that there is a dual active-receptive process at work when we perceive. We can see this best in his view that an active change takes place in the sensory organ when the impressions of the object's form are received by it. That is, when the form of an object is perceived the sense is actively changed to match it. "The perceiving subject becomes *isomorphic* with the sensible quality"³² and it is as a result of this change that perception occurs. It is worth noting that in such isomorphism we see, if not a refashioning then certainly recognition of the Empedoclean doctrine of *like perceives like*.

This is not to hold Aristotle's view to be synonymous with the early medics though. Methodologically, Aristotle turns away from their naturalism and materialism and proceeds instead by way of a speculative enquiry into the soul. His interests are deeply philosophical; he is concerned with understanding perception not by way of anatomy or the body's constitution but by seeing it most fundamentally as a faculty of the *psychē*. While the *psychē* and the body are inextricably linked, it is in the former that any understanding of perception must begin. That is, empiricism must be secondary to speculative philosophy and it is as a result of this preference that he advances his hylomorphic account of perception. His treatment of *aesthēsis* is built upon this matter/form distinction, it is here we see his philosophical inclinations. *De Anima* is less concerned with anatomy and more with understanding how perception, that power of the *psychē*, facilitates our ability to

³¹ D.W. Hamlyn, 'Aristotle's Account of Aesthesia in *De Anima*', *The Classical Quarterly*, Vol. 9, 1959, pg. 6

³² C.Shields, *Aristotle* (Oxford, 2007), pg. 295

know. As a result his interpretation of perception is at a markedly more abstract level than the empiricism of the medics- though their influence is quite clear to be seen.

A central theme throughout the Hippocratic corpus is that all medical enquiries must proceed by way of a holistic understanding of the κόσμος³³. It is when we appreciate the constitution of nature that we can move on to anatomy and physiology and from here we may move on to understanding the body's functions such as perception. In this materialistic, empirical focus we see a continuation of that turn from mysticism and divine causation which was perhaps seen first in the cosmology of Anaximander³⁴. Alcmaeon and the Hippocratic writers played an important role in the 5th Century BC turn towards 'rational medicine'³⁵, a turn seen in a lot of Presocratic thought at the time. In this turn the medical writers foreshadow an empirical interest in the body and its functioning that would influence a great deal of subsequent accounts inside and outside of medicine. Barnes even goes as far as to say that Alcmaeon laid the foundations for empiricist epistemology³⁶.

The medical writers are not only of interest for the ways they influenced or differed from the accounts of Aristotle or other subsequent philosophers. In their own right, they can be seen as offering a wealth of insight into both philosophical and medical matters. Their accounts not only show a great deal about early ideas of perception but illustrate the interaction between ancient medicine and philosophy. We miss a great deal if we neglect to juxtapose Alcmaeon and the Hippocratic writers with the Presocratic philosophers for they approached the same problems from different angles. Not only were the medics concerned with philosophy and cosmology but they looked to generalise aspects of such accounts- like the doctrine

³³ Cf. Tempkin, pg. 216 for a discussion of this Hippocratic method of enquiry.

³⁴ Cf. Longrigg, *Greek Rational Medicine*, pgs. 47-81 for a discussion of Alcmaeon's place within this period of philosophy.

³⁵ Cf. van der Eijk, pgs. 9-10 for a discussion of this turn and the idea of 'rational medicine' more generally.

³⁶ J. Barnes, *The Presocratics*, 2 vols., (London, 1979), pgs. 136-138.

of the elements- to apply to the body, its illnesses and maladies and its perceptual functions. If we view the ancients with a narrow and blinkered conception of philosophy as only those enquiries of the *phusikoi*, then we marginalise the insights of the medical writers. Van der Eijk³⁷ has noted the recent scholarly interest in the intersection between medicine and philosophy but this has yet to be reflected in much of the literature on the Presocratics.

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³⁷ van der Eijk, Ph. J., *Medicine and Philosophy in Classical Antiquity*, (Cambridge, 2005), pg. 8

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