

ARISTOTLE'S *DE ANIMA* II.5

IN THE LIGHT OF THE LITERALISM–SPIRITUALISM DEBATE



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2016

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Thesis submitted to the
Institute for Graduate Studies in Social Sciences
in partial fulfillment of the requirements for the degree of

Master of Arts
in
Philosophy

by
Ekrem Çetinkaya

Boğaziçi University

2016

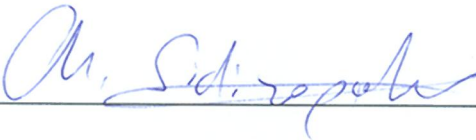
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in the Light of the Literalism - Spiritualism Debate

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August 2016

DECLARATION OF ORIGINALITY

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ABSTRACT

Aristotle's *De Anima* II.5 in the Light of the Literalism–Spiritualism Debate

This thesis aims to offer a detailed and critical reading of a section of *De Anima*, namely of *DA* II.5, which appears to occupy a central place in a modern debate between literalist and spiritualist interpreters of Aristotle's theory of sense perception. Taking sides in principle with the literalist interpretation of Aristotle, the present thesis argues that Aristotle has an understanding of physiology, especially in his theory of sense perception, which is not so alien to today's conception of it as opposed to what his spiritualist interpreters suggest. In this regard, the second chapter presents an expository analysis of the modern controversy and explores Myles Burnyeat's spiritualist reading of an analogy between sense perception and thinking that Aristotle establishes in *DA* II.5. The third chapter argues first that it is unlikely, at least in principle, that Aristotle would have a conception of physiology in which spiritual alterations in a sentient subject are employed to account for sense perception, on the grounds that he has significant ties with a physiological tradition that originated from the theories of the earlier Greek natural philosophers. Second, by offering an alternative reading of the analogy of *DA* II.5, the chapter tries to demonstrate that contrary to what Burnyeat argues, the analogy does not introduce two kinds of alterations: ordinary and spiritual. Last, it attempts to show that *DA* II.12, instead of confirming spiritualism, does in fact support the main contention of the present thesis that in Aristotle there is only one kind of alteration: ordinary alteration.

ÖZET

Literalizm–Spiritüalizm Tartışması Işığında

Aristoteles’in *De Anima* II.5’ine Bir Okuma Denemesi

Bu tez, Aristoteles’in algı teorisinin literalist ve spiritüalist yorumcuları arasında gerçekleşen modern bir tartışmada önemli bir yer tutan *De Anima*’nın ikinci kitabının beşinci kısmına detaylı bir okuma getirmeyi amaçlıyor. Aristoteles’in literalist yorumuna prensipte katılarak, bu tez esasen Aristoteles’in, özellikle algı teorisinde, spiritüalistlerin ileri sürdüğü kadar günümüz fizyoloji anlayışıyla uzlaşması mümkün olmayan bir anlayışa sahip olmadığını göstermeye çalışıyor. Bu bağlamda, elinizdeki tezin ikinci bölümü, literalistlerle spiritüalistler arasındaki modern tartışmayı sunduktan sonra Myles Burnyeat’ın Aristoteles’in *DA* II.5’te duyum algısı ile düşünme arasında yaptığı analogiye getirdiği spiritüalist okuma önerisini inceliyor. Üçüncü bölüm, öncelikle, Aristoteles’in kökleri erken Yunan doğa filozoflarına dayanan fizyolojist gelenekle belirleyici bağları olduğunu göstererek, algıyı açıklamak için özünde spiritüel değişimlerden yararlanan bir fizyoloji anlayışına sahip olmasının, en azından prensipte, muhtemel olmadığını iddia ediyor. İkincisi, söz konusu bölüm, *DA* II.5’deki analogiye alternatif bir okuma getirerek, Burnyeat’ın iddia ettiğinin aksine, Aristoteles’in analogik argümanla bize iki tür değişim takdim etmediğini göstermeye çalışıyor: olağan değişim ve spiritüel değişim. Üçüncü bölüm, son olarak, *DA* II.12’nin, spiritüalizmi doğrulamaktan ziyade, bu tezin temel iddiasını destekler nitelikte, Aristoteles’te tek bir tür değişimin, yani olağan değişimin var olduğunu kanıtlamayı deniyor.

ACKNOWLEDGEMENTS

I would first like to express my gratitude to my thesis advisor, Assoc. Prof. Chryssi Sidiropoulou, for her guidance, support and patience. She has always been there to help me with my studies by offering valuable guidance that enabled me to shape my studies since my undergraduate years. Her expertise and wise comments made this thesis possible. She always found time in her busy schedule to help me when I encountered a problem in my personal life.

Besides my advisor, I would like to thank Prof. Stephen Voss for his constructive criticisms and feedback, which contributed a lot to this research. His open-minded philosophical approach expanded the scope of this study. I am also grateful to Assoc. Prof. Geoffrey Bowe for being a companion to me during the intense process of writing this thesis. He was always very kind to me, open to meeting and discussing whenever I was confused.

Finally, I would like to thank my close friend and flatmate, Habibe, for her patience and support during this intense year of writing. Her understanding made life much easier in difficult times. Last but not least, I thank my friends Eren, Alim, Volkan, Hülya, Aylin, and Ahmet for their enduring friendship and support in the process of writing the present thesis.

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LIST OF ABBREVIATIONS OF ARISTOTLE’S WORKS

Abbreviation	Latin	English translation
APo	<i>Analytica Posteriora</i>	Posterior Analytics
Cat.	<i>Categoriae</i>	Categories
DA	<i>De Anima</i>	On the Soul
EN	<i>Ethica Nicomachea</i>	Nicomachean Ethics
GC	<i>De Generatione et Corruptione</i>	On Generation and Corruption
HA	<i>Historia Animalium</i>	History of Animals
Insomn.	<i>De Insomniis</i>	On Dreams
Juv.	<i>De Juventute et Senectute</i>	On Youth and Old Age
Mem.	<i>De Memoria et Reminiscentia</i>	On Memory and Recollection
Met.	<i>Metaphysica</i>	Metaphysics
Metr.	<i>Meteorologica</i>	Meteorology
PA	<i>De Partibus Animalium</i>	Parts of Animals
Phys.	<i>Physica</i>	Physics
Somn.	<i>De Somno et Vigilia</i>	On Sleep and Waking
SS	<i>De Sensu et Sensibilibus</i>	On Sense and Sensibles

CHAPTER 1

INTRODUCTION

The present thesis offers a close and critical reading of Aristotle's *De Anima* II.5. Seeing that Myles F. Burnyeat (1995) bases his spiritualist reading of Aristotle's theory of perception on an idea he himself gathers from a reading of *DA* II.5, I offer here an alternative reading. After claiming that in Aristotle there are always two aspects of sensory events as an instance of natural processes, i.e. material and formal aspects, Richard Sorabji (1974) asserts that when a subject perceives a sensible object, his relevant sense organ exhibits *literally* a qualitative change in itself, for instance his organ of seeing, the eye-jelly, becomes red when he sees a red object. Sorabji argues that such a qualitative change (alteration) is what constitutes the material physiological aspect of a sensory event. Going against Sorabji, Myles F. Burnyeat (1995) claims that Aristotle does not have an understanding of physiology similar to that which we have today. Basing his claim chiefly upon a certain analogy, made by Aristotle in *De Anima* II.5, between two modes of apprehension, i.e. between sense perception and thinking, Burnyeat argues basically that in Aristotle even though interactions of material beings as such are explained through the notion of qualitative change or ordinary alteration, psychological processes in sentient subjects are 'explained' through a different kind of change, i.e. through *spiritual* alteration. He claims that Aristotle has a physiological theory, which allows spiritual or unordinary alterations to occur in a sentient subject 'to account for' the subject's

perceptual awareness of sensible objects in the environment. Yet, he continues, today there being a consensus on theories of supervenience of the mental on the physical, we cannot accept such a physiological theory. Therefore, Burnyeat concludes, all the recent attempts to revive Aristotle's philosophy of mind, e.g., to take him as a progenitor of a modern theory of mind, i.e. functionalism, are in fact pointless. If we accept Aristotle's theory of mind as tenable in our times, we will then have to abandon our general commitment to the idea that life and cognition basically emerge from the physical material.

Having seen that Myles Burnyeat's spiritualist view of Aristotle's account of sense perception does chiefly stem from his reading of *DA* II.5, the objective of the present thesis will be to show that Burnyeat's reading of the section in question is mistaken. I will mainly argue that in Aristotle there is only one kind of alteration and that this alteration takes place in a material being only when it confronts another material being which has an opposite but still relevant quality. Offering a detailed and critical reading of *DA* II.5, I will show that there is no reason for us to take the alteration, which a sentient being suffers during a sensory activity, as an exception to the kind of alteration that insentient material beings undergo, i.e. ordinary alteration.

To achieve the aforementioned objective, in the second chapter of the present thesis, I will first present the ongoing debate between two parties of interpreting Aristotle's account of sense perception, viz. the debate between those who claim, like Sorabji, that during a sense activity a subject undergoes a literal assimilation of his sense organ to a relevant sensible quality and those who claim, like Burnyeat, that the subject suffers only spiritual assimilation of the organ to the relevant sensible quality in becoming aware of the latter. After presenting the debate with its initial cause and its motivation in a general picture, I will proceed to laying

down Burnyeat's reading of *DA* II.5 since, as I contend, his reading of this section of *De Anima* plays a central role in the spiritualist interpretation of Aristotle's theory of sense perception. Having completed the presentation of all this, I will reserve the third chapter of the present thesis for developing a criticism of Burnyeat's reading of *DA* II.5. In this regard, I will first attempt to show that the topic of the section of *De Anima* is in fact a question of a contrariety or similarity requirement between a sentient subject and his object—a question Aristotle inherits from his ancestors, namely from the early Greek physiologists. In that section of the present thesis, I will chiefly argue that since Aristotle there tries to establish his own position concerning this old question in the face of the earlier physiologists, we should see primarily, contrary to what Burnyeat's reading suggests, that Aristotle has a motivation to bring forth an explanation of sense perception that would not exclude a certain physiological aspect of it. In the second section of the third chapter of the present thesis, I will proceed to offering an argument against Burnyeat's spiritualist interpretation of Aristotle, by presenting an alternative and detailed reading of *DA* II.5. Here my main focus will be to show that by building an analogy in *DA* II.5 between thinking and sense perception, Aristotle just means to say that in each of their active operations both sense perception and thinking are analogous to each other because at those moments in each of the cases of apprehension there is an assimilation of the subject to the object. I will argue that since Burnyeat disregards a restriction that Aristotle makes to the analogy in the same section of *De Anima*, he fails to provide a complete and precise interpretation of the analogy. After all this, in the third section of the third chapter of the thesis, I am planning to offer also a detailed reading of *DA* II.12, which is employed by Burnyeat as a confirmation of his general spiritualist interpretation. There, I will basically argue that the description of

sense perception, stated in *DA* II.12 as ‘the reception of forms of things without their matter’ should be read in accordance with Aristotle’s thesis that sense organs occupy a middle or neutral quality in relation to each of their relevant sensible objects. I will argue that this is what is missing in Burnyeat’s argumentation and that for this very reason such a passage cannot be employed to confirm spiritualism, instead it offers a support to our main contention that Aristotle has an understanding of physiology which is not so alien as Burnyeat suggests to our conception of the physiological today.



CHAPTER 2

A CONTROVERSY BETWEEN THE LITERALISTS AND THE SPIRITUALISTS

Almost three decades ago, a controversy broke out among scholars over a recurring assertion made by Aristotle in *De Anima*, to the effect that the sense organ (*aistheterion*) is receptive of the form of a sense perceived object without its matter.¹ Together with another familiar contention of his that sense perception is an alteration (*alloiosis*) or change in quality,² the assertion expresses Aristotle's general account of sense perception (*aisthesis*): During a sense perceptual activity, a sense organ is assimilated *in form* to its relevant sense object and has the potentiality to be assimilated as such³ to whatever the latter is in actuality. Being divided into two parties, a great number of interpreters have come to disagree with each other on how to understand this alteration or assimilation of the organ. On the one side of the debate, scholars, Richard Sorabji taking the lead, have proposed that Aristotle means here a *literal* assimilation of the sense organ to the sense object, which designates the material or physiological aspect of a sense perceptual activity besides its formal aspect, viz. perceptual awareness.⁴ In other words, they have argued that in the process of a sense perceptual activity, the sense organ, becoming like the sense

¹ See, e.g., *DA* 424a18-19, 425b24-25, 435a22-24; and cf. *DA* 429a15, 434a29, and *GC* 319b32-a2

² See, e.g., *DA* 415b24-25 and 416b33-34, *Insomn.* 459b4-5, and *Phys* 244b9; and cf. *Met.* 1009b12-15

³ *DA* II.5 418a4-5: "The sentient subject [*aisthetikon*] ... is potentially such as the object of sense is actually" (trans. 1957). See also *DA* II.11 424a2

⁴ S. Everson and R. Woolf can be said to belong to this party beside Sorabji.

object, comes to exemplify a quality in the same way as the sense object does, i.e. in a physical way. On the other side of the debate are scholars, led by Myles F. Burnyeat,⁵ who have offered a *spiritualist* reading of the assertion, claiming that in Aristotle's view the sentient subject or the sense organ becomes like the sense object in a non-physical or, more precisely, in a *spiritual* way, opposed to the way in which the object possesses a certain quality: The sense (sense organ or sentient subject) just becomes aware of the quality without being physically assimilated to it.⁶ Taking sides in principle with Sorabji's literalist thesis, I contend that Burnyeat's spiritualist reading of sense perception is not correct since his reading contradicts *prima facie* with Aristotle's general hylomorphic conception of natural beings and processes including sense perception—hylomorphism being a doctrine which, broadly speaking, asserts that each natural being or process constitutes a unity of form and matter to the effect that its form and matter cannot be separated from each other.⁷ So in the present thesis I will mainly criticize Burnyeat's interpretation of *De Anima* II.5, an interpretation which seems to occupy a central position in his argumentation towards the spiritualist reading of Aristotle. Still before that, we need to see clearly the reason why the controversy in question broke out, what both parties in fact say, and what significance the controversy holds when considered in a more general picture.

⁵ T. K. Johansen and J. M. Magee can also be listed as the holders of spiritualist reading of Aristotle.

⁶ S. Everson (1999) is the first person that calls these two ways of interpreting Aristotle's theory of perception "literalism" and "spiritualism." (p. 10)

⁷ See, e.g., *DA* II.2 414a15-23

2.1 The controversy in a general picture

It is in fact an article, delivered in 1995 by Myles F. Burnyeat, which sparked the debate. Burnyeat in this article entitled “Is Aristotelian Philosophy of Mind Still Credible? (A Draft)” argues that philosophers like H. Putnam, M. C. Nussbaum, and K. V. Wilkes,⁸ who claim that Aristotle is a forerunner of a modern theory of mind, i.e. functionalism,⁹ are mistaken because Aristotle’s physics, corresponding to the material side of mind-body dualism we inherited from Descartes, is no longer credible (p. 3). In order to support their claim that Aristotle is a progenitor of functionalism,¹⁰ Burnyeat continues, they need Richard Sorabji because Sorabji is the person who attempts to make a materialist interpretation of Aristotle’s theory of mind (or soul), which essentially results in asserting that he has a physiological theory. So indeed Sorabji (1974), thinking that in Aristotle’s opinion the mental (or better, the psychological) cannot be realized without the bodily, utters, “In a very un-Cartesian way, Aristotle insists that, in some sense of ‘is’, every mental act is a *physiological* [emphasis added] process” (p. 68).

Richard Sorabji (1974) here restricts the senses of the predicate ‘is’ so as to rule out the possibility of suggesting that Aristotle is a crude or reductionist materialist—a reductionist who would contend that every mental act is *identical* to a physiological process. In his article “Body and Soul in Aristotle,” Sorabji complains that in regard to his psychological theory the same Aristotle has been so far interpreted by different names in very different ways: Some scholars like T. Slakey

⁸ Burnyeat refers here to Putnam’s “Philosophy and our Mental Life” (1975), Nussbaum’s *Aristotle’s De Motu Animalium* (1978), and Wilkes’ *Physicalism* (1978).

⁹ Putnam, for instance, states: “Having come this far I was pleasantly surprised to find that my [functionalist] view was substantially the same as Aristotle’s, although stated a bit more precisely with the aid of the vocabulary of contemporary scientific methodology and cybernetics” (1975, p. XIV). Likewise, somewhere else Putnam expresses, while arguing against identity theories of the mind: “... as Aristotle saw, psychological predicates describe our *form*, not our *matter*” (1975, p. 279).

¹⁰ For Nussbaum and Putnam’s reply to Burnyeat, see “Changing Aristotle’s Mind” (1995)

and W. Matson have argued that in Aristotle's view psychological processes are 'simply' or 'purely' events taking place in the physical or material organs. Or some others, like F. Solmsen, holding an exactly opposite view have proposed that for Aristotle psychological states occur without needing to have any physiological states. Yet others such as J. Barnes, G. R. T. Ross, and W. D. Ross have sought a middle position but, having failed to establish a compromise between mental or psychological states and physiological states, either provided an eclectic picture, claiming that some psychological states like thought and desire seem to have no material aspect whereas other states like emotions and perception take place involving a material 'component', or asserted Aristotle to have defended psychophysical parallelism. Sorabji states that all these interpretations are false; Aristotle's psychological theory must rather be taken to be a *sui generis* one (1974, p. 63-64). So, shying away from a reductionist materialist, or purely psychologistic (non-materialist), or Cartesian dualistic, or else psychophysical parallelistic interpretation of Aristotle's psychological theory, he attempts to provide an account in accordance with Aristotle's hylomorphism. In this regard, he argues that we need to offer a formal and a material definition of psychological activities without stumbling into Cartesian dualism, in which 'purely' mental and 'purely' physiological definitions are possible to offer, on the grounds that in Descartes' opinion the mental and the bodily "have no affinity" at all (ibid, p. 71 and 85). On the testimony of a passage from *Metaphysics* VII.17 1041b10-f, Sorabji states, we need to keep in mind always that for Aristotle even though the formal is not a part or a component of a thing but the material is the component, the thing still cannot be said to be identical to its matter (1974, p. 70).^{11 12}

¹¹ See also Sorabji (1974): "[Aristotle is] refusing to say that a thing *is* its matter" (p. 69 n17).

Aristotle in *De Anima* II.12 asks, “What is then smelling besides being a certain affection?” (424b17, own translation). This is a question articulated in a passage in which Aristotle questions whether or not the effects of the alterations (*alloioiseis*) that sensible qualities cause to take place in bodies show a difference when they take place in sentient beings and when they take place in insentient beings such as inanimate beings and plants. Richard Sorabji (1974) translates *aisthanesthai* as awareness—*aisthanesthai*, being a word appearing in the subsequent sentence in *DA* II.12, is the infinitive form of Aristotle’s familiar noun ‘*aisthesis*’ which in turn stands for the process of sensation, sense perception, or perception (p.70).¹³ Rendering *aisthanesthai* as such, Sorabji contends that smelling, or more generally sense perception, besides being an affection, is awareness of the affection or alteration in the sense organ such as awareness of the smell in the organ of smelling or of the coloration of the organ of seeing, which is the eye-jelly (*kore*) inside the eye (p. 71-72).¹⁴ He takes perceptual awareness to be that which designates the formal aspect of the sense perceptual activity but this is not what causes the controversy. As a matter of fact, Burnyeat (1995) approves of Sorabji’s translating *aisthanesthai* as awareness and taking the awareness to refer to the formal aspect, and he also uses the word in the same way throughout his article (p. 18), except that while Sorabji (1974) takes the object of the awareness to be the alteration in the organ such as a sense

¹² Sorabji (1974) rejects also ascribing any supervenience theory of the mind to Aristotle—a theory in which the mental is defined to depend for its existence on the bodily—on the grounds that supervenience theory leads us to accept the predictability of the mental states but for Aristotle the physiological cannot lead to the psychological just as “bricks do not ‘lead to’ a shelter, though they are necessary ... if a shelter is to be realized” (p. 86-87). But due to the same reason, Burnyeat (1995) finds it reasonable to attack the current attempts to revive Aristotle’s psychology, arguing that we cannot hold a theory today such as Aristotle’s, that denies any supervenience theory of the mind, which he alleges is the minimum condition for being a modern science (p. 23).

¹³ J. Owens (1982) argues that the term ‘*aisthesis*’ may mean both ‘sensation’ and ‘perception’ but since Aristotle takes cognition of incidental objects under *aisthesis*, it is better to take the term to mean perception, something broader than sensation (p. 21). Nevertheless, to avoid confusion and stay noncommittal, I continue to use ‘sense perception’ as far as possible.

¹⁴ See also, *ibid*, p. 88, and especially p. 72 n30

organ's becoming colored or another's becoming smelly (p. 72), Burnyeat (1995) takes it to be the color or sound out there in the subject's environment (p. 15, 17, 20, and 21). What initiates the debate is Sorabji's contention that during a sense perceptual activity, the sense organ literally takes on (or receives) a sensible quality, suggesting that this 'literal taking on' constitutes the physiological process of the activity.¹⁵

More specifically, Sorabji claims that according to Aristotle, in the process of seeing, the eye-jelly becomes colored, as it gets assimilated to the sensible object in form (1974, p. 71-72 and 72 n30). He refers to a clause in *DA* III.2 425b23-24: "that which sees is in a way colored [*hos kechromatistai*]" (own translation). The clause by itself does not suggest that 'that which suffers coloration or alteration' is the eye-jelly since the subject of the clause is "that which sees" but Sorabji, on the testimony of some other passages from Aristotle,¹⁶ argues that it would be "an absurd theory" if it claimed that 'that which suffers coloration' is the eye as a whole, putting aside mentioning the entire sentient subject undergoing coloration (p. 72 n30). Instead, he continues, in Aristotle's opinion some watery substance inside the eye is what undergoes coloration. In this regard, he translates the Greek term '*kore*' as the 'eye-jelly,' coming up against numerous Aristotle translators such as Hamlyn, Hett, and Hicks, who render the term as 'pupil.'¹⁷ Sorabji argues, the coloration, or more generally the alteration in the sense organ, is observable by ordinary sense perception in principle, even if not in practice since the alteration takes place inside the peripheral organ, somewhere which is not "ready to inspection" (p. 72 n30).

¹⁵ See also Sorabji (1971, p. 58 n16 and 59 n20)

¹⁶ Such as *DA* 431a1718, *HA* 491b21, and *PA* 653b25

¹⁷ Indeed Aristotle, in *SS* 438a5-13, finds Democritus' idea absurd that seeing is comprised of objects' reflection or mirroring on the surface of the eye, arguing that water also mirrors whatever is reflected upon it but no one claims that water is capable of seeing.

Turning back to the discussion, although it is safe to say that Aristotle is committed to the idea of an assimilation of sense organ (or of sentient subject) to the sense object in sense perception,¹⁸ the qualification “in a way” in the above-cited clause has divided his interpreters into two parties. While Sorabji (1974) seems to stay noncommittal about the qualification and takes the clause to mean that during sense perception, the eye-jelly becomes *literally* red as the sense object is red, Burnyeat (1995), referring to *DA* II.5 where he contends that Aristotle introduces two sorts of alteration, proposes that Aristotle would here mean an *unordinary* assimilation taking place in the organ, namely a *spiritual*¹⁹ alteration: the sense organ only becomes aware of red or middle C. He states that even though Aristotle may sound attractive in his lack of a mind-body dualism in seeing the soul or the psychological to be the form or function of the body, his conception of the body is no longer believable (p. 16). It is such a conception of the body in which, as a psychological activity, e.g., sense perception is considered as a spiritual alteration only, as lacking a physiological story. For example, Burnyeat (1995) writes:

[Sense organ’s] receiving the warmth of a warm thing without its matter means becoming warm without really becoming warm; it means registering, noticing, or perceiving the warmth without actually becoming warm. ... In his [Aristotle’s] world, it is taken for granted that warmth and red can bring about ‘effects’ which are not effects of the material basis of these qualities. (p. 24)

Burnyeat refers here to another description of the process of sense perception given by Aristotle in *DA* II.12 424a18-19: “... sense [*aisthesis*] is that which is receptive of the form of sensible object without the matter” (trans. 1957).²⁰ While there are also materialist interpretations of the description such as Sorabji’s non-reductionist

¹⁸ See *DA* II.5 417a19-21, 418a3-6; cf. *DA* I.5 409b20-ff, and especially *GC* I.7 323b-ff.

¹⁹ Burnyeat ascribes the idea of spiritualism to J. Philoponus, T. Aquinas, and F. Brentano, who are “anxious to deny that the color is literally taken on by the eye-jelly” (1995, p. 18).

²⁰ For other references to the same idea in Aristotle, see n1 above

interpretation,²¹ Burnyeat offers a spiritualist one, asserting that during a sense perceptual activity, a sentient subject receives a certain sensible quality without being qualified or altered in an *ordinary* sense: The sentient subject just becomes aware of the sensible quality. He states, agreeing in a way with Sorabji, "... this awareness is not in any simple way reducible to the physical or causal interaction with the object of perception" (1995, p. 18). Thus, he argues, such a kind of physiology, in which non-material or spiritual alterations are possible, cannot be accepted by us who have witnessed the demolition of the Aristotelian conception of the physical through Descartes and others (p. 16).

In arriving at such a conclusion, Burnyeat "attacks"²² from many directions the Nussbaum-Putnam thesis that Aristotle is a progenitor of functionalism in seeing the mental or psychological to be the formal, not the material, and in his stress upon the functions. Burnyeat (1995) strengthens his position by developing arguments about various points such as Aristotle's lack of explanation for life and awareness, his dissimilarity to Cartesian dualism, in which Burnyeat alleges Descartes at least paves the way for us to develop our conception of the physiological side of the duality, the difficulty in defending the presence of the idea of a contingent relation between material and functional states in him,²³ the difficulty in ascribing to him any supervenience theory,²⁴ and his taking phenomenal or secondary sensible objects to

²¹ 1974, p. 74 n35, and see n11 above

²² Nussbaum and Putnam describe, in their reply to Burnyeat, his attitude as an "attack" to their thesis (1995, p. 37).

²³ Concerning this point, see *PA* 644b8-15 and 645b-15 where Aristotle states that animals and their organs are grouped together with respect to resemblances in their structures or functions (not in their matter). See also *PA* 645b15-ff, *HA* 588a15-b3, and *DA* 416a-5

²⁴ See *DA* 408b16-18 where Aristotle makes use of the example of fear to argue for the unpredictability of psychological states in the sense that both soul and body can be genuine (efficient?) causes of change in the living organism.

be real qualities.²⁵ Since the debate on the possibility of a functionalist reading of Aristotle is not my concern here, I will not go into the details of the aforementioned arguments that Burnyeat presents against the Nussbaum-Putnam thesis.

Instead, I will pick out one argument of Burnyeat's to work on, which seems specifically developed against Sorabji's literalist reading: his interpretation of *DA* II.5 where Aristotle attempts to provide two senses of actualization of the potential as a part of his answer to his times' familiar question 'whether the relation or interaction between a sentient subject and a sensible object is between similar or opposite qualities.' As I see it, Burnyeat bases his spiritualist reading mainly on his interpretation of *DA* II.5 and, I contend, he fails in doing so by providing an imprecise and incomplete interpretation. Therefore, thinking that Sorabji's literalist view seems in principle true but certainly un-instructive and misleading in taking the formal aspect of sense perception as perceptual awareness, and that Burnyeat's view is mistaken as far as it is based on his interpretation of *DA* II.5, I am going to reserve the second section of this chapter for laying down Burnyeat's interpretation of *DA* II.5. In the third chapter of the present thesis, I will attempt to make an alternative close reading of *DA* II.5, to show how Burnyeat fails in his spiritualist interpretation of Aristotle. To make the failure in Burnyeat's interpretation clearer, I will first try to show that the central question of the section of *De Anima* is in fact an old question originated from the earlier Greek physiologists who attempt to bring forth

²⁵ On the history of the notions of primary and secondary qualities, C. Wolf-Devine (1993) states: "The debate over the nature of color was particularly lively because at the time Descartes was writing, the study of light had been more or less relegated to the physicists, but colors were still regarded as the province of philosophers, and the resistance to a mechanistic explanation of colors was quite strong" (p. 4-5). Besides, M. D. Wilson (1993) states, roughly speaking, that even though Descartes has a simplistic version of the view, with John Locke, Aristotle's 'special sensibles' (color, sound, smell, etc.) began to be called as 'secondary' qualities in the sense that these special sensibles "do not really exist in the objects themselves" but primary qualities such as shape and size do exist in them (p. 163). In Aristotle, these primary sensibles are named as 'common sensibles.' See *SS* 442b4-f where Aristotle complains that Democritus and other natural philosophers treat common sensibles as special sensibles.

physiological explanations of psychological phenomena, and that this being so Aristotle in the section of *De Anima* in question also needs to be read in accordance with this physiological tradition. Second, with the help of some central passages in Aristotle's corpus, I will try to offer a promising reading of the lines of the analogy that Aristotle makes in the same passage, namely in *DA* II.5, contrary to Burnyeat's reading of it. And finally I will offer an explication of the phrase 'reception of sensible forms without matter' made in *DA* II.12, against Burnyeat's employment of it as a confirmation of his general spiritualist interpretation of Aristotle's account of sense perception. In this way I hope I can shed some light on the matter towards its resolution.

2.2 Burnyeat's interpretation of *De Anima* II.5

As expressed before, Myles F. Burnyeat bases his spiritualist reading of the alteration which is said to take place in a sentient subject or sense organ during a sense perceptual activity, on his interpretation of *De Anima* II.5. This is a section in which Aristotle, besides other things, introduces a distinction between the alteration that a person undergoes when learning a piece of knowledge and the 'alteration' that the person undergoes when exercising the knowledge that he has learnt.²⁶ But before embarking on presenting Burnyeat's interpretation of the section of *De Anima*, I think we need to see the place the section occupies in the whole book and what it is about in fact.

²⁶ Aristotle uses the same distinction between possession of knowledge and its exercise also in his other works to illustrate some other issues. See, e.g., *Phys.* VIII.4 255a33-b6 and *SS* IV 441b22-24; cf. also *DA* II.1 412a223-24 and *DA* III.4 429b6-10

After presenting, and directing a number of criticisms to, the earlier theories of the soul throughout Book I, offered by his predecessors such as Thales, Empedocles, Anaxagoras, the Pythagoreans, the Atomists and Plato, Aristotle proceeds to providing a positive account of the soul in the second Book of *De Anima*. The first two sections of Book II are occupied with the discussion of his definition of soul, the irreducibility of the soul to the body, its relation to the body, and the like in a general manner. In the subsequent section, he introduces the capacities or faculties of soul (*dynameis*), such as the nutritive, the appetitive, the sensitive, the locomotive, and the intellective, and their nested hierarchical presence in living beings. Having talked about the capacities or the parts of the soul there in a general way, Aristotle is going to argue, as it can be seen in the fourth section of Book II, that the mere talk of capacities, and partitioning and listing them do not tell us too much, there is a need to deal with each capacity on an individual basis, together with each of their correlative objects and functions. So, in this line of thought, after examining the nutritive capacity by looking at its object and its physiological process shortly, and before studying each of the five sense modalities one by one, such as vision, hearing, and smelling, until the end of Book II, and other capacities like the primary or common sense, imaginative, opinionative, the intellective, the appetitive, and the locomotive in Book III, Aristotle proceeds to an examination of the sensitive capacity in *DA* II.5 416b32-418a6 in a general and theoretical manner.

DA II.5 is an introductory section in the sense that Aristotle here delivers his general views on sense perception before reserving each succeeding section for the study of each of the five individual senses. His main concern here is to answer a question which weighs on the minds of the Greek philosophers from the beginning: whether the sentient subject or sense organ and the sensible object need to be

contrary or similar to each other in order for the subject (or the organ) to be affected by the sensible object. That this question is the main topic of the section of *De Anima* is clear from the fact that Aristotle opens the section with the question, provides his own answer in the second paragraph, and closes the section with a restatement of his answer (*DA* 416b35-f., 417a19-21, and 418a5-6). Although we will see in detail which position Aristotle takes hold of concerning the question in the third chapter of the present thesis, we can shortly state that Aristotle proposes to defend a middle position, namely that sense organ and sensible object are in one respect contrary to each other but in another respect alike. Restating his familiar claim that sense perception is an alteration (*alloiosis*) or, more specifically, consists of being acted upon (affection, *pathos*),²⁷ he argues that this affection takes place in the sense organ and is caused by the sensible object which has a contrary quality with respect to the quality that the sense organ possesses just before a sense perceptual event. So, in regard to the question stated above, Aristotle holds that the alteration occurs due to the contrariety of the qualities possessed by the relevant sense organ and sensible object. He states that at the beginning of the process of being acted upon the sense organ is contrary to the sensible object with respect to a quality, but at the end they become like each other.

To ground his position with regard to the main question of *DA* II.5, stated in the above paragraph, Aristotle asks another question—probably to those who hold that the sentient subject and sensible object must be similar to each other. He asks, why do we not have sensations of the sense organs themselves, apart from sensation of external objects, given that these organs too are generated by nature out of the elements (*stoicheia*), such as fire and earth, which normally excite sensation (*ibid*,

²⁷ *DA* 416b33-34 and see n2 above for other references to the same idea in Aristotle

417a2-7). He argues, even though these elements have actual existence, meaning that when present, they always produce their effects, the sense organs have potential existence, they are like fuel (*kauston*, the combustible), which cannot burn on its own but needs an actual object, like fire, to be set on fire (ibid, 417a8-10). Likewise, sense organs cannot actualize their potentiality on their own, they need to be moved or acted upon by relevant external actual objects.

Having established all the points he wants to make about the potential existence of the sense organs, their need for being actualized through a process of being acted upon or being altered by the sensible objects whose existence is actual at least during a sense activity, Aristotle proceeds to introducing two senses of actualization of the potential since alteration is a movement and all sorts of movements are defined by him elsewhere²⁸ to be actualization of the potential. He uses the example of the senses of the term 'knower,' which Burnyeat also makes use of in order to ground his spiritualist reading of the alteration in the sense organ or sentient subject. Aristotle asserts that the term 'knower' (*epistemon*) is used in three senses (ibid, 417a21-f.). A person is called knower in the sense that, belonging to a class or a species, he has the potentiality to learn a piece of knowledge, e.g., grammatical knowledge (I). A person is called knower in the sense that he has acquired the grammatical knowledge, having actualized his potentiality to learn it but not his potentiality to use or exercise it (II). Lastly, a person is called knower in the sense that he is using or exercising at the moment his grammatical knowledge, having actualized both his capacity to learn the knowledge and to use it: He currently speaks in the language (III). The example, as it seems, can be taken either to be three

²⁸ Such as in *Phys.* III.1 201b5

sorts of persons, who are said to be knower, or the three phases of a person's learning a piece of knowledge.

After setting up these distinctions between the senses of the term 'knower,' Aristotle claims that even though both transitions, from (I) to (II) and from (II) to (III), are the actualizations of the potential, the former transition is an alteration but the latter is either not an alteration at all or an alteration of a different kind.²⁹ This is so because, he argues, the process in the latter case is the process of the preservation of the potential in the subject by a similar or alike actual object whereas in the former case there is a destruction, loss or extinction of one of a pair of the contraries in the subject by a contrary actual object. Aristotle uses also the example of building, arguing that a builder cannot be said to have altered when he builds, viz. when he practices the art of building that he has already acquired, just like a knower or speaker of a language cannot be said to have altered when he speaks.

Now since, as we expressed before, the section of *De Anima* in question as a whole is about his general theory of sense perception, Aristotle wants, as it appears, to apply the results of the above distinction between two transitions, which the 'knower' is said to have, to the case of sense perception as a part of his answer to the original question of *DA* II.5: whether the sense organ is affected by a contrary or by a similar quality of the sense object. However, it seems now more appropriate to leave the discussion of how Aristotle employs the above distinction to illustrate the case of sense perception to the next chapter of the present thesis, but to see closely from this point on how Burnyeat makes use of the distinction between the transitions to ground his spiritualist reading of Aristotle's theory of sense perception.

²⁹ *DA* 417b5-8

Burnyeat (1995) contends that the transition from having the capacity to learn a piece of knowledge (I) to the possession of the knowledge (II) is comparable to the transition, in the case of sense perception, from having no sense organ to possessing a sense organ or, more precisely, to possessing the sensitive capacity: “We are already at birth possessed of the capacity to perceive” (p. 19). He refers to a clause in *DA* II.5, in which Aristotle says that in sentient beings the first change is made by the male parent (*DA* 417b17). The transition, Burnyeat continues, from the possession of knowledge (II) to its exercise (III) must be then comparable to the transition from non-perceiving (the sense organ’s being dormant) to actual perceiving a sensible quality out there in the external world (to the organ’s being “awakened” to a quality): We become aware of a color such as red or a sound such as middle C (1995, p. 19). Burnyeat calls the first transition *ordinary* alteration or change of quality found in the causal interactions of the bodies in nature with each other, e.g., the alteration a green apple undergoes while becoming red, or the alteration a cold thing undergoes while becoming warm, and he names the second transition as *unordinary* or special sort of alteration involved in sense perception, e.g., the sentient subject just becomes aware of red or middle C.

Since, Burnyeat argues, we already possess them from birth, our sense organs, with their capacity to sense perceive, do not undergo an ordinary or real alteration from (I) to (II) at all during a sense perceptual activity,³⁰ implying in a way that we had already suffered some physical change while being in the womb till our birth. What we suffer in daily life during sense perception is the unordinary alteration only, the one from (II) to (III). As he says, “... the physical material of which

³⁰ In a later article, Burnyeat admits that he was mistaken in claiming that the sense organs do not alter at all. However, he continues to claim that he was right when asserting that Aristotle allows spiritual alteration in his physiological theory (2002, p. 29 n4).

Aristotelian sense-organs are made does not need to undergo any ordinary physical change to become aware of a color or a smell” (1995, p. 20). We just become aware of a sensible quality in our environment without suffering an ordinary alteration. Aristotle’s physiological theory allows our sense organs to have such a kind of alteration, unordinary or spiritual, Burnyeat states again.

Finally, based upon this idea of spiritual alteration that sense organs are alleged to undergo, Burnyeat (1995) reads the phrase from *DA* II.12 424a18-19, ‘reception of the forms of sensible objects without their matter,’ to mean that a sentient subject becomes aware of the form of a sense object without becoming altered in an *ordinary* way by the sense object (p. 21-22). Sorabji in his article asserts that Aristotle’s idea of ‘receiving the form without matter’ is originally against the Empedoclean and Democritean theory of emanation or effluence—the theory that sensible objects send off ‘material particles’ (effluences, *aporrhoai* or images, *eidola*)³¹ to the pores (*poroi*) of the sense organs. That being said, he alleges, Aristotle’s idea still should be read as an idea designating some physiological processes. The sense organ or the sentient subject, by ‘taking on’ the form or quality of the sensible object without its matter, becomes assimilated to the object without admitting the material particles of Empedocles and Democritus (1974, p. 74, and 74 n35).³² Opposing this reading, Burnyeat argues that if what Sorabji asserts were the case, the reception of the sensible forms *with* matter, which Aristotle says the plants and inanimate beings such as the air (the medium) suffer, would mean that insentient

³¹ Cf. Laks (2005) for an exposition of the emanation theory, both Empedoclean version and Democritean version (p. 264)

³² See also for various expositions of the emanation theory, in Aristotle’s corpus, *DA* 442a15-16, *SS* 440a15-f. and *GC* 324b24-6b29, and see *GC* 325b5: “[In Empedocles and Leucippus’ view] solids creeping in to fill the void places [pores of sense organs in the body]” (Aristotle, trans. 1995). Cf. also *DA* 435a4-8, *SS* 437b12-8a5, *SS* 438a26-b16, and *DM* 452a10-12 for a variant of the emanation theory, this time the eye emits visual rays.

beings could receive not only sensible forms or qualities but also material particles. However, he continues, when a tree is exposed to the sunlight, it just becomes warmer, there is no further suggestion in Aristotle's idea that it also absorbs some warm matter. Burnyeat asserts that forms are not a kind of things, which can "flit from here to there, with or without a material vehicle" (1995, p. 24). Thus, the sense organs' receiving of the form without matter must mean their becoming like in form but not in matter, namely their undergoing spiritual alteration only, whereas the receiving of the form with matter must mean the becoming like both in form and in matter, namely the suffering real or ordinary alteration. Burnyeat argues that if we were to ask Aristotle what the physiological difference is, which makes the sentient beings able to receive the form of a thing without its matter and insentient ones such as plants and inanimate beings unable to do so, his reply would be that the former has the capacity to sense perceive but the latter does not (ibid, p. 25). Yet, he states, we have seen that in Aristotle's opinion the actualization of this capacity is comprised only of the second transition, namely of spiritual alteration.

Myles F. Burnyeat concludes that Aristotle does have a physiological theory of sense perception. However, since this theory allows sense organs to undergo spiritual alterations in order to 'explain' perceptual awareness, we cannot accept it. Being committed to the idea of supervenience, we cannot believe such a physiological theory today. To follow Aristotle would just mean for us to abandon our search for an explanation of awareness with material terms, with a conception of the material or physiological that Cartesian dualism at any rate has allowed us to develop centuries ago. So what we can do with Aristotle's philosophy of mind is just to get rid of it, to "junk it" as antiquated (1995, p. 26).

CHAPTER 3

CRITICISM OF BURNYEAT'S READING OF THE *DE ANIMA* II.5

In the previous chapter we have seen that Burnyeat's application of Aristotle's distinction in *DA* II.5 between two senses of the actualization of the potential, that a knower or builder is said to exhibit, to the case of a sentient subject occupies a central place in his argumentation towards the spiritualist reading of Aristotle's theory of perception. Basing his spiritualist reading on this application, Burnyeat arrives at two interdependent conclusions that concern us here. First, he asserts that for Aristotle there is no ordinary or real alteration at all in the sense organ during a sense perceptual event, but only an unordinary or spiritual one. Second, he asserts that in Aristotle there is no search for an explanation of perceptual awareness, an explanation based on some material or physiological processes, which we would like to have and accept today. Both assertions will be responded to in detail in due course but still we need to express our contention in advance that Burnyeat's interpretation of *DA* II.5 is an imprecise and certainly incomplete one. It is imprecise because it does not take into consideration what the section in question is about in fact and why Aristotle concerns himself with answering a certain question there. And it is incomplete in the sense that it ignores certain qualifications or restrictions that Aristotle places in the analogy between a knower or builder and sense-perceiver as regards the actualizations of their potential. Yet Burnyeat overstretches the analogy by extending the similarity between the two cases beyond where Aristotle means to

keep it in, even though he himself complains about analogical arguments, saying that we cannot know where the analogy stops and where it is binding (1995, p. 17).

Hence, as far as his interpretation of the section of *De Anima*, i.e. II.5, is concerned, I propose to argue in the following pages that Burnyeat is mistaken in ascribing to Aristotle a spiritualist conception of the qualitative assimilation of the sense organ to the sense object in the process of a sense perceptual activity.

3.1 A physiological tradition

In *DA* II.5, as expressed before, Aristotle primarily attempts to position himself towards a question which I strongly believe governs the course of the entire section: whether the sense organ needs to have a contrary quality to the quality that the sense object possesses or a similar quality in order for an alteration in the sense organ to take place. First of all, we need to state at the outset that, in ascribing spiritualism to Aristotle, Burnyeat seems to pay no attention to the fact that this question is not a question that comes to Aristotle's mind out of nowhere. As a matter of fact, even though the question reflects Aristotle's own formulation of it since it is a well-known fact that the terminology of quality and substratum, and of their sharp distinction is specific to Aristotle,³³ we know also that the question is raised and responded to by the earlier *physiologoi* (physiologists), for example by such prominent names as Empedocles, Democritus, and Anaxagoras. They all busied themselves very much with bringing forth causal physiological explanations for cognitive phenomena as well as for self-initiating movements that animals, especially human beings, exhibit.

³³ See *Cat.* V 4a10-ff: "It seems most distinctive of substance that what is numerically one and the same is able to receive contraries" (Aristotle, trans. 1995) or *GC* I.4 319b8-9: "... we must distinguish the substratum, and the property whose nature it is to be predicated of the substratum" (Aristotle, trans. 1995).

As D.W. Hamlyn (1959) writes concisely: “Most of the Pre-Socratic accounts of aesthesis are *causal* [emphasis added] accounts of how sensations are produced” (p. 7).³⁴ If so, when Aristotle embarks upon answering the above-paraphrased question, he at the same time tries to establish his own position towards these physiologists, which thus suggests, contrary to Burnyeat’s reading, the presence of a continuity in the search for causal physiological explanations between Aristotle and them in regard to this issue, at least. I think, the testimony of Aristotle himself and of his student and successor at the Lyceum, Theophrastus, is enough to see that the picture is such as we describe now. In this connection, for example, Aristotle states,

All [the earlier philosophers], then, it may be said, characterize the soul by three marks, movement, sensation [*aisthesis*], incorporeality, and each of these is traced back to the first principles [*archai*]. That is why, with one exception, all those who define the soul by its power of knowing [*to ginoskein*] make the soul either an element [*stoicheion*] or constructed out of the elements. The language they all use is similar; they say, *like is known by like* [emphasis added]; as the soul knows [*gignoskei*] everything, they construct it out of all the principles. (DA I.2 405b11-17, trans.1995, modified)

As the cited passage makes it clearer, the question of similarity and contrariety between the sense perceiver and sensible object is already old even by the time Aristotle lives, not something that he himself invents. It is asked or answered by the earlier natural philosophers in their efforts to bring forth explanations for cognitive activities, such as sensation and thinking, with physiological terms. In this regard, Book I of *De Anima*, for example, especially its second and third sections, is significant in its engagement in providing expository analyses of the earlier philosophers’ answers to the question of similarity and contrariety.³⁵ We have also a clearly written survey of these natural philosophers’ positioning with respect to the

³⁴ See also Laks (2005, p. 292-293)

³⁵ See also *GC* I.7 323b1-ff. where Aristotle investigates into the nature of acting (action) and being acted upon (passion) in connection with its accounts offered by his predecessors.

question in Theophrastus's work '*De Sensibus*.' Therefore, it seems safe to state already now that Burnyeat is mistaken in ascribing the idea of spiritual alteration to Aristotle as if Aristotle were speaking and doing philosophy in isolation, having had no touch with the physiological tradition he was born into. The idea of spiritualism, I think, does not stem directly from Aristotle himself but instead from the stipulations made by some Aristotle commentators like John Philoponus and Thomas Aquinas, to whom Burnyeat himself credits this idea (1995, p. 18). Yet carrying out a study to see whether or not he is right in crediting the idea of spiritual alteration to these prominent commentators is beyond the confines of the present study. Rather, in the following pages I will take the other direction to work on, namely the physiological tradition which Aristotle was born into, in regard to the discussion of the similarity and contrariety issue. In this way, I aim at showing that the main topic of *DA* II.5 does, at least in principle, demonstrate that, having significant ties with the physiological tradition, Aristotle has there a material or physiological orientation in seeking for an explanation for sense perception, contrary to what Burnyeat's reading suggests.

The chief question of *DA* II.5 is, to repeat, a question the answer of which is found in the physical or physiological theories provided by the earlier Greek natural philosophers. As both Aristotle and Theophrastus point out repeatedly, there are two camps or positions, prevailing among the earlier natural philosophers and differing in their reply to the question 'whether the relation or the interaction between the sentient subject and sense object should be accounted for through some material similarity (*homoion*) or contrariety (*enantion*) between them' (Aristotle, e.g., *GC* I.7 323b1-ff; Theophrastus, *De Sensibus* Part I). Before proceeding, it seems worth noticing the fact that the earlier philosophers' attempt to explain the interaction in

question on the basis either of similarity or of contrariety should be understood within their general interest in bringing forth causal explanations for interactions of natural corporeal entities with each other. Almost all the earlier philosophers, as Aristotle contends in *Metaphysics* IV.5 1009b14-15, take sense perceptual activity to be a material alteration³⁶ occurring in the sentient subject or somewhere in between subject and object.³⁷ What divides these natural philosophers into two camps is their reply to the question ‘how or by which cause this alteration results.’

Some of the earlier philosophers, namely the holders of the similarity thesis such as Heraclitus, Empedocles, Democritus,³⁸ and Plato, argue that the alteration in the sentient subject is caused by objects similar to the subject, being committed to the idea that the like is affected or cognized only by the like.³⁹ This idea seems to be reminiscent of a common belief among the Greeks that all nature is akin (Theophrastus, *De Sensibus* §1).⁴⁰ As the passage quoted above from Aristotle testifies, since they believe in the similarity thesis, they postulate that the soul is made out of their first principles (*archai*) or elements (*stoicheia or rhizomata*) out of which they already think everything else we see around is constituted. For example, Empedocles takes material things, including living beings, to be constituted out of his four elemental substances (fire, air, water, and earth). In this line of thought,

³⁶ See also *DA* I.5 410a25-27 and *DA* III.3 427a27-30

³⁷ See also *SS* II 438a26-27: “[In some of the earlier philosopher’s opinion] the visual ray [issuing from the eye] should extend itself all the way to the stars, or else go out merely to a certain point, and there coalesce, as some say, with rays which proceed from the object” (Aristotle, trans. 1995).

³⁸ For Democritus, see *GC* I.7 323b9-14: “He asserts that agent and patient are identical, i.e. like. It is not possible (he says) that others, i.e. differents, should suffer action from one another ...” (Aristotle, trans. 1995).

³⁹ Aristotle lists as the holders of the similarity thesis the names like Heraclitus (*DA* 405a25-29), Empedocles (404a12-15, 410a27-29, etc.), Democritus (see above note), Diogenes (405a22-25), Alcmaeon (405a30-f.), and Plato (404b15-19). Theophrastus mentions, as the holders of the thesis, Parmenides, Empedocles, and Plato (*De Sensibus* § 1), hesitating to say of Diogenes (§ 39), Alcmaeon (§ 25) and Democritus (§ 49) which camp they belong to, and ascribing the contrariety thesis to Heraclitus, unlike Aristotle does.

⁴⁰ See also Guthrie (1997) who attributes the idea of kinship of the nature to the Pythagoreans in their idea that after death, a human person’s soul can transmigrate to the bodies of other animals, *not* necessarily to another human person’s body (p. 35-36).

believing in the similarity thesis, he thinks in a manner that if the soul⁴¹ were devoid of an element, say, the water (*hydor*), an ensouled being could not have cognition of the things that are made out of the water. So he takes the soul to be constituted out of his four elemental substances (*rhizomata*), which are, in his opinion, as stated before, the source of everything we encounter in daily life, in order to grant that ensouled beings could perceive and ‘know’ their likes (Aristotle, *DA* I.2 404b10-15, *DA* I.5 409b24-27, and *GC* II.6 334a10-14). Further, according to Theophrastus, Empedocles, roughly speaking, contends that sense perception occurs when the sensibles “fit into” or enter the passages (*poroi*) of the sense organs (*De Sensibus* § 7-8, trans. 1917). We cannot hear a color or see a smell because some sensibles are too big to enter the narrow passages of some sense organs and some other sensibles are too small to fit into some other wide passages. As a part of his theory of vision, Empedocles, like Democritus, claims that each object emits constantly emanations or effluences (*aporrhoai*) to the passages of the eye. Empedocles puts forward this idea of effluence in order to account for the anomaly that seeing, like hearing, is constituted by being the perception of distant objects, unlike the objects of touching, tasting, and smelling—the last one standing in the middle of being a contact sense and a distance sense (Aristotle, *SS* V 445a5-13).⁴² In a sense perceptual activity such as seeing and hearing we need a “delegation,” using Laks’ word, not the relevant sense object itself, to enter the passages in order to ensure that the perceptual activity be realized on the model of ‘contact’ (2005, p. 264). Inside the eye is fire⁴³ circulated

⁴¹ In fact Empedocles does not speak in the terms of soul (*psyche*) in his poetic works but in the language of blood (Laks, 2005, p. 251).

⁴² See also *DA* II.11 423b2-ff. for a general discussion of sense perception by contact and by distance, and Aristotle’s requirement for media for all the five sense modalities.

⁴³ Aristotle in *SS* II 437a23-8a5 states that Plato in *Timaeus* also adopts the idea that the eye must be made out of fire because light issues from the eye. Both Plato and Empedocles are said to have adopted this idea in order to account for the phenomenon that after we press upon our eyes for a while, we see some flashing-outs.

with earth and air. And the eye has passages made out totally of fire and of water. We see white objects because their effluences can enter only the passages made out of fire and black objects because their effluences can enter only the passages made out of water, which is considered to be dark (Theophrastus, *De Sensibus* § 7-8). As can be seen, the idea of similarity or identity between the sensibles and sense organs found its way into some of the earlier theories of sense perception, like into Empedocles' theory.

Having said that, there is another camp or school tending to explain the interactions of natural material beings in terms of their contrariety to other material beings of nature. According to Aristotle the sole member of this school is Anaxagoras,⁴⁴ whereas Theophrastus takes also Alcmaeon and Heraclitus among the holders of the contrariety thesis (Aristotle, *DA* I.2 405b20-21; Theophrastus, *De Sensibus* § 1 and § 27-31).⁴⁵ Believing in the idea that the contrary is only affected or cognized by the contrary, they argue that the alteration in the sentient subject or in the sense organ is caused by an object contrary to the former. Anaxagoras, for instance, holds that sense perception is an alteration or change and that an alteration is due to a contrariety between the subject and the object (Theophrastus, *De Sensibus* § 27). It is not an easy task to talk about what position Anaxagoras indeed adopts because of a lack of reliable sources and the presence of conflicting statements and reports concerning his account of sense perception, I will still try to lay down what I have understood from different sources. He is known with his assertion that with the exception of the mind (*nous*), everything is mixed with everything else—an assertion seeming to be put forward to capture the idea of multiplicity or diversity observed in

⁴⁴ Yet in *GC* II.6 323b3 Aristotle claims that the contrariety thesis is more popular among the earlier philosophers than similarity thesis.

⁴⁵ Cf. n39 above

nature (Dorzek, 2005, p. 163). In being mixed with everything else, things, including our bodies, are in fact compounds (*synkrisis*). The compound bodies become perceptible to us due to the predominance of one ingredient, which can be one of the opposites (the hot and the cold, the heavy and the light, etc.) or of the Empedoclean elements (*rhizomata*) or of the seeds (*spermata*), over the others in them (ibid, p. 165).⁴⁶ Besides, since it is said to be separate in virtue of being unmixed (*amige*) with anything else, the *nous*, of which we have a share,⁴⁷ has some control over everything else in the sense that it is impassible (*apathes*), or cannot be affected, by them.⁴⁸ So, when a sentient subject and sense object are confronted with each other, due to the predominance of an ingredient (e.g. the sour) in the former and due to the predominance of a contrary ingredient (e.g., the sweet) in the latter, the sentient subject, also in virtue of having a share in the impassable *nous*, can sense perceive or discriminate the sweet (Theophrastus, *De Sensibus* § 28). Therefore, as Laks states for him, "... the discriminating power of perception would itself be impossible if *we* were not different from what we perceive," Anaxagoras is committed to the idea of contrariety between the sense perceiver and the sense object (2005, p. 266).⁴⁹

Further, as a confirmation of his commitment to the contrariety thesis, Anaxagoras is reported to have claimed that during the process of alteration, the change into the opposite direction in the sentient subject causes the subject to suffer pain, especially

⁴⁶ Still it is not clear whether these ingredients are of the compounds or of the primordial mixture (*meigma* or *symmixis*), which Anaxagoras believes was present together with the *nous* before the order (*kosmos*)—the order which the *nous* brings by causing the mixture to rotate and to separate (*apokrisis*) so as to form compound bodies. See also Peters (1967). I am taking these ingredients to be also present in the compounds.

⁴⁷ *DA* I.2 404b4-5: "... [the] mind he [Anaxagoras] regards as existing in all living things, great and small, noble and base ..." (Aristotle, trans. 1957).

⁴⁸ See *DA* I.2 405a17: "[Anaxagoras speaks of the mind as] simple, unmixed, and pure" (Aristotle, trans. 1957). *DA* I.2 405b20-21: "Anaxagoras is alone in his belief that mind cannot be acted upon, and that it has nothing in common [*koinon*] with anything else" (Aristotle, trans. 1957). And *DA* III.4 429a18-20: "It is necessary then that mind, since it thinks all things, should be uncontaminated [*amige*], as Anaxagoras says, in order that it may be in control, that is, that it may know, ..." (Aristotle, trans. 1957). See also *DA* III.4 429b23-f.

⁴⁹ See also *DA* III.4 for Aristotle's version of this view.

when the change is into excessive contraries, such as bright colors and extremely loud sounds (Theophrastus, *De Sensibus* § 29).⁵⁰

It is such a physiological tradition that ties Aristotle closely to the physiologists preceding him. This is a fact that Burnyeat apparently pays no attention to when attributing, erroneously, the idea of spiritual alteration to him. Aristotle, as seen so far, inherits the question of alteration and the discussion of contrariety and similarity from his ancestors like many other ideas. Hence *DA* II.5 should be read in accordance with this picture presented above, *not* with the way in which Burnyeat makes Aristotle do psychological philosophy without engaging in a dialogue with his predecessors, who are shown above to have a physiology-oriented agenda in their philosophical activities.

We have already laid emphasis upon that in *DA* II.5 Aristotle attempts to build his own view in the face of the earlier physiologists' views, taking a middle course between their similarity and contrariety theses. He states that the sense organ and the sense object are similar in one sense and contrary to each other in another sense. This phrase is employed both in *De Generatione et Corruptione* I.7 and in *De Anima* II.5. In the former work, Aristotle argues that the earlier philosophers' views on this issue are conflicting because the followers of both positions, as a matter of fact, take into consideration merely a part of the whole story. If two things, he continues, are absolutely alike or identical, there won't be any cause for an alteration to take place in one of them. The same argument goes for any two things that are in all respects contrary to each other. Aristotle concludes, the agent acts on the patient in virtue of its similarity in one respect to the patient and in virtue of its contrariety in

⁵⁰ Against Anaxagoras on this issue, in *De Sensibus* § 31-32, Theophrastus argues, agreeing with Aristotle in the opening paragraph of *Metaphysics*, that our daily experience shows the opposite: We and many animals instead *enjoy* sense perceiving because perception is in accordance with our nature and nature always seeks for the good.

another respect. The agent and the patient need to be generically the same but specifically different. The conclusion reflects Aristotle's general idea that only things of the same genus can affect each other in virtue of some contrariety with respect to their species: Random things cannot affect each other, except incidentally. For example, as he articulates, "by nature body is affected by body, flavour by flavour, colour by colour ..." (*GC* I.7 323b14-a13, trans. 1995). That being said, in the latter work, specifically in II.5, we have a different explication for the phrase that the sense organ and sense object are in one respect alike and in another respect unlike. Here Aristotle states that the followers of the two camps are both relatively right because, he puts forward, at the beginning of the process of alteration, the sense organ is unlike the sense object but whenever the process of alteration finishes they end up being alike (*DA* II.5 417a19-21 and 418a5-6).

Still Aristotle has another peculiarity of his own, namely he conceives the alteration, like any other movement, to be an instance of actualization of the potential inherent in a material being. As can be observed in any department of his physical studies, he always tries to see things in terms of his own notions and ideas such as his thesis of potentiality and actuality. Likewise we see Aristotle, in *DA* II.5, applying this thesis of his to the old question of similarity and contrariety so as to solve the puzzle. Aristotle thinks that like is not affected by like. He writes in *De Sensu*, "... nothing produces or suffers an effect except in so far as it contains some element of contrariety" (IV 441b14-15, trans. 1957). If what the similarity thesis states were the case, things, by being identical to themselves, would affect or move themselves (*GC* I.7 323b20-24, trans. 1995).⁵¹ But it is not the case, a sentient subject (or a sense organ) cannot move or alter himself and thereby cannot have sensations on his own

⁵¹ Cf. *DA* II.5 417a2-7 and 17-18.

without needing the sensible objects: The subject cannot have a sensation of, say, a particular color ‘white’ or a taste ‘sweet’ without requiring each of the sensibles to be present. As we have touched upon in the previous chapter of the thesis, in Aristotle’s opinion, a sense organ has a potential existence like the existence of fuel, and just because of this the sense organ requires an actually operating sensible object to move or to alter it so as to be actualized in the same manner as the fuel needs to be ignited with an actually burning object, i.e. fire, in order to be burned. Yet the potentiality of the sense organ cannot be actualized by any random or haphazard sensible object, rather, there needs to be a sensible object which has a quality generically the same as the quality of the sense organ but specifically different from it, viz. a contrary quality. Hence, for instance, as Aristotle puts it simply, “... the sense organ is potentially such as the sensible object is actually” (*DA* II.5 418a4-5, trans. 1995). In brief, we need an actually operating contrary sensible object, whose relevance to the sense organ is already established in the relation of actuality to potentiality, to operate on the sense organ. In this way, the sensible object could actualize the potentiality of the sense organ by assimilating it qualitatively to itself.

Through this actualization, the sentient subject ends up having the organ assimilated to the object with respect to a certain relevant quality. Aristotle in *DA* II.5 introduces the analogy of the two senses of actualization of the potential, which a knower or builder is said to have, in order to show that, as I am going to argue in the next section of the present chapter, both the knower and the sentient subject are ‘now’ similar to their respective object in their activity (*energeia*) in the second sense—viz. in thinking a piece of knowledge and in sense-perceiving a sensible quality, respectively—not in their processes of second actualization of their potential. We have now reached a point at which I think we can see how Myles F. Burnyeat in

his reading fails to recognize the fact that in *DA II.5* Aristotle attempts to answer a question raised and responded to in a tradition in which physiological explanations are sought in order to account for cognitive and other activities, like locomotion, that living beings exhibit. This is a failure that makes Burnyeat miss the point that for Aristotle a sense organ, like any other corporeal or material object, needs to suffer a material alteration, in Burnyeat's words an ordinary or real alteration, so as to have its potentiality actualized. Burnyeat in his account misses the fact that in Aristotle's physics a sense organ, in virtue of being a material being, is what introduces potentiality (*dynamis*). The notion of potentiality is there to explain why and how movements (*kineseis*) in nature in general, and alterations (qualitative changes, *alloioseis*) in certain cases, like in the case of sense perception, occur. The sense organ exhibits a change in its quality during a sense activity, a change towards an opposite direction, viz. towards the quality the sense object possesses.

3.2 The alteration a sense organ undergoes

It seems appropriate now to proceed to the discussion of the transitions that the knower or builder is said to exhibit and its analogical application to the sentient subject. We have stated in the previous section of the present thesis that as far as a knower or a builder is concerned, Aristotle describes the first transition to be a process through which the builder, when learning the art of building, suffers a number of material alterations and extinction of one of a pair of contrary qualities by the other member of the pair, and the second transition to be a process through which the builder either does not suffer an alteration at all or else suffers an alteration of a different genus since here the builder is building a house while preserving and

actualizing his capacity to build a house or his art of building which he has already become assimilated to during his first transition. In Myles Burnyeat's interpretation, as seen in the previous chapter of the thesis, the first transition is, in the case of sense perception, a process from having no sense organ to the possession of an organ, viz. a process of acquiring the sensitive capacity. And the second transition is, according to him, a transition from non-perceiving to an actual perception of sensible qualities in a sentient subject's environment. Thus, to repeat, Burnyeat concludes that since we, as sentient beings, are already possessed of sense organs with their capacity to perceive at birth, our sense organs do not undergo the first transition at all, namely a real or ordinary alteration, during an instance of sense perceptual activity. Yet we have shown sufficiently in the preceding section of the present thesis that for Aristotle the sense organ, in virtue of being a corporeal physical being, does suffer alteration in a real and genuine way whenever confronted with certain corporeal beings.

Still, making the builder's second transition comparable to the process through which a sentient subject proceeds from non-perceiving to actual perceiving of sensible qualities in his environment, and thus concluding that the only alteration the sentient subject suffers is a spiritual alteration in becoming aware of a sensible quality, Burnyeat seems to have in his mind the idea that even if the sense organ like any other material being undergoes an ordinary or real alteration in its confrontation with another material being, this does not demonstrate that this real alteration should hold any relevance to the sense perceptual activity itself: to the perceptual awareness that the sentient subject is said to have. And this fits well with Burnyeat's second assertion, as we have put into words at the beginning of the present chapter, that in Aristotle's physiological theory there is no search for material explanations, which

we today would accept, of sense perceptual activities, i.e. of perceptual awareness—instead only spiritual or unordinary alterations are employed to account for them.

In responding to such a conclusion that Burnyeat apparently draws above we need primarily to state that since, as we will see, Burnyeat's reading of the analogy between a knower and a sense perceiver is incomplete, he stumbles upon a mistake in thinking that in Aristotle's opinion, being comparable to the case of the builder, there are two *separate* phases or transitions that a sense organ undergoes—one being the process of the material alteration of the sense organs and the other being the process of actualization or activation of their capacity to sense perceive. Burnyeat's separation of a single perceptual activity into these two phases shows that he in fact conceives the relation of the phases in question as ungrounded in Aristotle. Likewise, ignoring a certain restriction that Aristotle places in the analogical extension in *DA* II.5, he erroneously makes Aristotle defend such an idea that there are two unbridgeable kinds of alterations occurring in the sense organ: ordinary alteration and unordinary alteration.

So, in the face of Burnyeat's reading, which I hope we could have presented sufficiently up to now, I suggest a close reading of the analogy in *DA* II.5. In this way, I think we can understand to what extent Aristotle wants the analogy to hold between sense perception and thinking. Hence, in the following pages, I am going to show first that for Aristotle the difference between the two modes of apprehension comes partially from a certain difference between the notions of *dynamis* and *hexis*, and thus between their processes of acquisition by a subject (corresponding to the first transition). Second, I will present a symmetry between sense perception and thinking, or a certain 'coincidence' of the former with the latter, which will at last help us see the reason why Aristotle makes the analogy between them. After this, I

will mention in detail a difference or asymmetry between the actualizations of sense perception as a *dynamis* and thinking as a *hexis* (corresponding to the second transition), which will help us see this time how Aristotle restricts the analogical extension in *DA* II.5. In due course, I am planning to ground and arrive at two interdependent conclusions against Burnyeat's reading: First, I will argue that for Aristotle there is only one kind of alteration occurring in the sense organs in each of our short-term episodes of sense perceptual activities: ordinary or real alteration. Second, I will argue that in Aristotle the ground of the relation between material alteration and sense perception lies in the idea that only through a momentary similarity, achieved solely with and depending totally on ordinary or real alteration, of the sense organ to the sensible object, can the sentient subject be in sense-perception as in a psychic activity. Yet before all this, we need to see shortly how Aristotle proceeds in his argumentation in the section of *De Anima* in question.

In *DA* II.5, Aristotle states that being comparable to the possession of knowledge in the builder case, at birth we are already possessed of sense organs or of the capacity to sense perceive (*to aisthanesthai*). Here in 417b18, he employs the word *to aisthanesthai*, which, we said before, is the infinitive form of the word *aisthesis*, which in turn simply refers to the process of sense perception. In a preceding section of the work, more precisely in II.1 412a22-f., we see Aristotle building the same analogy of possession of knowledge and its exercise, this time to argue for the idea that we need only a possession of the soul or of a capacity, not its actuality (*energeia*) or its exercise, in order to call a natural organic body alive or an ensouled being. Thinking in the same line, I take the word *to aisthanesthai* to mean here the subject's sensitive capacity, which we are said to possess at birth, of course in virtue of having certain physical material organs. After making the first

comparison between possession of knowledge and possession of sensitive capacity, Aristotle puts forward, “actual sensation [*to (aisthanesthai) kat’ energeian*] corresponds to the exercise of knowledge [*theorein*]” (DA II.5 417b19, trans. 1957). And having made this analogical comparison, Aristotle, in the succeeding line, adds that there is a difference between the two cases:

... the objects that excite the sensory powers to activity [*energeia*], the seen, the heard, and the rest, are outside [*eksothen*]. The ground [*aition*] of this difference is that what actual sensation [*kat’ energeian aisthesis*] apprehends is particulars [*kath ekaston*], while what knowledge [*episteme*] apprehends is universals [*katholou*], and these are in a sense within [*en*] the soul itself. That is why a man can think [*noesai*] when he wants to but his sensation does not depend upon himself—a sensible object must be present [*hyparchei*]. ... the sensible objects are particular and external. (DA II.5 417b20-2, trans. 1995, modified)

We know from elsewhere that in Aristotle’s opinion, only through sense perception do we acquire all the objects of other cognitive activities such as the images we see in our dreams, the memories we acquire in daily life, and surely the universals we apprehend in our thinking activities. This is as such because the objects of sense perception are in fact universals, realized in matter and thus particularized, to a degree that their matter allows them to be as such. For Aristotle, unlike for Plato, there is no way for the universals or forms to exist except in matter. Yet, like Plato, Aristotle thinks that what introduces movement and diversity in nature is always the matter, not the form. Thus we have the objects of sense perception: particular, numerous, and everywhere but also universal, intelligible, or at any rate classifiable. In the realm of understanding, what we can do in the face of this diversity and particularity in nature is only to group things together under the headings of species and genera, a grouping or clarification whose ground of possibility is, as metaphysically assumed, already present in nature: We arrive at the universals only through sense perception of particular objects.

Having made such a rough introduction, we need now to proceed to making an expository analysis of the extent of the analogy in question by taking help from some central passages in Aristotle's other works⁵² so as to see clearly at last what the above-cited passage means to say in essence for our discussion. The first disanalogy arises between the processes of acquisition of 'capacity' of thinking and of capacity of sense perception. In *Posterior Analytics* II.19 99b26-36, we see Aristotle contrasting the two modes of apprehension in their respective first acquisition: sensitive capacity as a *dynamis* and thinking 'capacity' as a *hexis*. The sensitive capacity is said to be a connate capacity or power (*dynamis symphytos*) present in all animals,⁵³ but in its apprehensions it is said to be less accurate (*akrebes*) than the *nous*, or more properly the mode of apprehending the first principles (*archai*)⁵⁴ or the universals (*katholou*), which is a mode, argued to be *not* connately possessed but in a way acquired (*echein*: to have, to possess; thus *hexis*) by some animals only, viz. human beings, through a certain long-term physical material process. His argument here basically is as follows: If we were possessed of the mode of thinking or knowing at birth, we would use it starting from our early childhood years, *not* our connate sensitive capacity, which is surely inferior in accuracy or in certainty to the former. Therefore, we acquire the superior mode of apprehension in a later period of our lives. In the same way, in *DA* II.5, we observe Aristotle calling the acquisition of a piece of grammatical knowledge an acquisition of a *hexis* (417a34 and 417b16). In contrast, as expressed before, we are said not to 'acquire' the capacity to sense

⁵² Such as *APo* II.19, *Met.* I.1, and *NE* VI

⁵³ See also *Met.* I.1 980a30: "By nature animals are born with the capacity of sensation ..." (Aristotle, trans. 1961). And see *Juv.* III 18-20: "... we say a creature is alive in so far as it is an animal, and an animal in so far as it is sensitive" (Aristotle, trans. 1957).

⁵⁴ In the realm of understanding, *archai* correspond to axiomatic (non-syllogistic) and non-hypothetical truths used either as the laws (or rules) for syllogisms, e.g., principle of non-contradiction and of excluded middle, or as major premises of syllogistic (demonstrative) argumentations in scientific enterprises, e.g., the premise that all humans are mortal. See especially *Met.* IV. 3-7 for the nature of these truths, the province of study that deals with them, etc.

perceive: We are already possessed of it at birth just after the development of our necessary sense organs in the period when in the womb.⁵⁵ We need to notice already now that in Aristotle most of the time the possession of a certain knowledge means the ‘possession’ of a certain *hexis*, which is a term Jonathan Barnes, in his commentary on *Posterior Analytics*, argues to mean a “state,” a “grasping,” or a “mental disposition,”⁵⁶ suggesting that in Aristotle having a certain knowledge is the same as being in a certain mental (or psychic) disposition, both of which we gain or acquire through some processes after we are born, unlike a *dynamis*, e.g., the connate sensitive capacity.⁵⁷ In short, the initial difference between sense perception and thinking is a difference which lies in our kind of development towards the possession of each ‘capacity’—one taking place in the womb till birth and the other in any period of time after birth, respectively.

Second, there is symmetry or, more properly, a ‘coincidence’ of our sense perceptual activities with our acquisition of a *hexis* for thinking or knowing a certain piece of knowledge. As put into words above, according to Aristotle, only through sense perception do we obtain the objects of all sorts of cognitive or apprehensive activities that we exhibit. Objects of thinking, the universals, are one sort of them: “... sense perception establishes [*empoiei*] the universal in us” (*APo* II.19, 100b4, own translation).⁵⁸ Through numerous individual sense perceptions of certain things, e.g. particular human persons, we end up having a universal idea about them, e.g., the idea of human species. As *APo* II.19 chiefly reveals, we, human beings, can

⁵⁵ Cf. *GA* II.3 736a30-7a20 where Aristotle asks, from where (from the material supplied by the female or the semen by the male) and when in the womb we start to acquire the *dynamis*. He also there talks about the ‘vital heat,’ or the ‘matter’ of the *dynamis*, being different from the elemental matter, especially from the fire.

⁵⁶ Barnes (2002): “... it may help to bear in mind that the Greek for ‘state’ is cognate with the Greek for ‘grasp’ or ‘possess’; English does not allow this connection to appear” (p. 260-261).

⁵⁷ But this does not mean that sense perceptual activities are not actuality of certain psychic capacities. Surely they are also genuine examples of psychic activities.

⁵⁸ Cf. *DA* III.8, 432a3-15

make inferences, abstractions, or inductions (*epagoge*) from our previous and repeated sense perceptions of a diverse group of similar things, each perception of which is realized in us through some material alteration.⁵⁹ To express in precise terms, in the way towards the acquisition of a piece of knowledge or a general idea of a certain thing, e.g. the idea of human species (towards the acquisition of a *hexis*), we take the first step through suffering material alterations in our repeated sense perceptions of the thing's particular manifestations in nature, e.g., various particular human persons.⁶⁰ Even though these alterations or affections, which our sense organs suffer during their episodic sense activities, do not stay in our sense organs but go away as quickly as possible, for example just after we confront a new sensible object, they certainly leave behind their traces or percepts (*monai*, *typoi*, *aisthemata*, or *phantasmata*) in us,⁶¹ retained as memories⁶² in the common sensorium, in the place around the heart, because memory is taken to be an affection or operation (*pathos* or *ergon*) of the common sense capacity (*Mem.* 450a10-15 and 451a17). When these retained traces get accumulated to a certain amount, we are considered 'experienced' in the sense that we have 'seen' or 'lived' a sufficient number of various and particular examples of a certain thing: "... many memories of the same thing produce finally the capacity for a single experience" (*Met.* I.1 981a, trans. 1961). After becoming a man of experience, each of us becomes ready and capable of making an abstraction or inference out of all the particular memories of the thing. As it appears, Aristotle argues in *Met.* 981a-ff, not all of us succeed in making the abstraction or

⁵⁹ In order to go on presenting the picture well, I need to assume for now that *ordinary* material alteration takes place in the sense organ during each sense activity. I will make a detailed discussion of it towards the end of the present section.

⁶⁰ Putting aside the question 'whether each human person as a whole can be an object of sense perception' in Aristotle. See the last section of the present thesis

⁶¹ *APo* II.19 99b36-a3

⁶² *APo* II.19100a4-5 and *Met.* 925a31

the universal judgment. For example, when compared to an artisan who is taken to be superior in a certain respect, the man of experience as such does not make the abstraction or inference, even though he has acquired or retained now enough of the individual traces to do so.⁶³ On the other hand, the artisan such as a physician—taken comparable to a physicist or a metaphysician in knowing, e.g., the causes (*aitia*) why people in general get sick and how they can be healed—makes the generalization or inference out of the traces, which he also has gained after having individual sense perceptions of numerous and particular manifestations of a certain thing.⁶⁴

The above picture explains well the statement in *DA* II.5 417a30-b1, that the subject, in proceeding from being a knower in the first sense to being a knower in the second sense but certainly not in the third sense, i.e. in his acquiring a *hexis* or learning a piece of knowledge, suffers a series of alterations (*alloioseis*) and changes (*metabolai*) from a contrary state (*hexis*). In many sections of *De Anima* such as III.4, Aristotle asserts that the mind is not mixed with matter or that it has no organ (III.4 429a24-f.).⁶⁵ It may initially cause confusion and lead one to think falsely that it contradicts what we have stated so far. I think in these passages Aristotle speaks of the mind or thinking activity in the third sense, namely as an activity (*energeia*) occurring in the process of a subject's second transition from being a knower in the second sense to being a knower in the third sense. Yet, in regard *only* to the first transition that the knower or a builder is said to undergo, Aristotle seems to adopt the contrariety thesis in the sense that in the way towards having a universal judgment,

⁶³ An interpretation I owe to J. Barnes in his commentary on *Posterior Analytics* (2002, p. 264).

⁶⁴ As it appears, in Aristotle we have two kinds of learning, one being obtained from a teacher and the other from one's own experience such as the above. See *NE* VI.8 1142a11-24: "... why a boy may become a mathematician, but not a wise man or a natural scientist. Is it because the objects of mathematics exist by abstraction [*aphairesis*], while the first principles [*archai*] of these other subjects come from experience [*empeiria*] ...?" (Aristotle, trans. 1995).

⁶⁵ See also *DA* II.1 413a7-8, *DA* II.2 413b25-28, *DA* I.4 408b19-32, *GA* II.3 736b27-28, *Met.* XII.3 1070a25-27

or say, in the way of moving from being an ordinary person towards being an artisan, the builder suffers a great number of *material* or genuine alterations in his sense organs and thus in his common sensorium. He suffers these alterations because Aristotle holds the contrariety thesis for sense perception too, as shown in the previous section of the present thesis. Hence in learning the art of building, the builder-to-be person takes help from numerous sense perceptions of a group of similar or related things, say, the process of house-building, the type of the bricks employed, the way a master builder makes mortar or acts in general, etc., all of which cause over and over his sense organs to suffer many qualitative changes, which in turn result in an establishment of the *hexis* for knowing the art of building, in him. To conclude, in Aristotle, the coincidence or overlap of sense perception with thinking or knowing, we have intended to show here, lies in the fact that the knower becomes a knower, in the second but certainly not in the third sense, only through numerous material alterations which he undergoes when he sense perceives repeatedly certain particular sensible things of a similar kind. This is so because, as is now evident, there is no way for a subject to acquire and thus possess a universal idea or a certain piece of knowledge apart from sense perception. To put in briefly, the sense perceptual activity, being the unique source of the universals, literally coincides or overlaps with the thinking activity during a knower's first transition but thanks to the traces, left after individual sense perceptions in his common sensorium, the knower can go on exercising or using the knowledge or the universal judgments,⁶⁶ which he himself has formerly induced out of these traces: the builder can build a house whenever he wants to.

⁶⁶ It seems that not only the traces left after individual sense perceptions but these universal judgments or thoughts also are materially kept in the common sensorium because Aristotle states, in *Mem. I*, that we remember not only our previous sensations but also our thoughts. But still we need to bear in mind

Third, this conclusion we draw above brings us to an asymmetry or disanalogy between the processes of the second transition that the knower and the sense perceiver⁶⁷ are said to exhibit—an asymmetry in the processes of being in *energeia* (activity), which Aristotle means to show with his restriction to the analogy in the cited passage above, but which Burnyeat certainly ignores in his account, namely in making these second transitions comparable to each other. As expressed above, after having a series of material alterations in our sense organs and finally in our common sensorium in the period when we sense-perceive repeatedly particular manifestations of a certain universal thing, we end up having made a universal judgment of it or having had the knowledge of it (corresponding to the first transition, the acquisition of a particular *hexis*). As we ourselves make the abstraction or the universal judgment, we, so to speak, ‘earn’ it or make it our own. Hence whenever we wish to think or to use it, we can by ourselves actualize our thinking capacity (corresponding to the second transition). In other words, since the acquisition and thus possession of a *hexis*, e.g., the art of building, for Aristotle means being in a mental or psychic disposition, and likewise since, after numerous material alterations taken place in him during the process of learning the art, the builder-to-be person ends up being similar to the art, he no more needs to be a patient of all these alterations. He no more needs to learn the art again. And once he has gained the knowledge of the art, he can use or exercise it no less than he can raise his

that in our remembrances we cannot resurrect or call back a previous sensation but its trace (now called memory) and surely a thought. See *Mem.* I 449b19-21: “... when one has knowledge [*episteme*] or sense perception [*aisthesis*] without their actualizations [*energeiai*], then one remembers” (trans. 1957, modified).

⁶⁷ When I say the second transition that a sentient subject undergoes, I mean the only transition the subject undergoes after birth. For Aristotle, the subject’s first transition takes place in the womb, as we have concluded above.

arms or walk whenever he wishes to, at least for a period of time.⁶⁸ It is now in his liberty, as an agent, to practice his knowledge of the art to build a house where bricks, mortar, etc. are now merely patients of his *energeia* or of this practice of his. And when he builds a house or when he is in *energeia*, he no more suffers alteration or any other kinds of change as far as the being-built house is taken per se to be the patient of his activity: "... the carpenter is not affected by timber [*hyle*], but the timber by the carpenter; the carpenter merely changes from idleness [*agria*] to activity [*energeia*]" (Aristotle, *DA* II.4 416b2-3, trans. 1957, modified). Being still a human being, i.e. an enmattered being,⁶⁹ he does and must go on to undergo many other changes in all the senses of change or movement in Aristotle.⁷⁰ Yet he is the agent of the house-building event and as far as he is taken to be so, he does not (need to) suffer alteration at all.⁷¹

On the other hand, when it comes to sense perception, we observe that for Aristotle the sense perceiver remains the patient in both of two transitions of his. He is the patient of the development of his sense organs and thus of his sensitive capacity while in the womb (corresponding to his first transition). Besides, throughout each of his sense perceptual activities after birth (corresponding to his second transition), I allege, he continues being the patient of ongoing assimilative operations of sense objects over his sense organs. I believe, the point we have

⁶⁸ In *NE* VI.5 1140b28-30, Aristotle writes, "But yet it [*phronesis*] is not only a reasoned state [*hexis meta logou*]; this is shown by the fact that a state of that sort may be forgotten [*lethe*] but practical wisdom cannot ..." (trans. 1995). This shows that for Aristotle we may lose our *hexeis*, perhaps unless we practice them.

⁶⁹ *DA* I.4, 408b13-15: "Probably it is better not to say that the soul pities, or learns, or thinks, but to say that the soul is the instrument whereby man does these things" (Aristotle, trans. 1957).

⁷⁰ That is, change in quality (alteration, e.g. in color, taste, temperature, etc.), in quantity (in magnitude, e.g., in weight, length etc.), in space (locomotion, e.g., going there or here, up or down), and in substance (generation and corruption, e.g. birth and death). See *DA* 406a13-15, *Cat.* 15a13-f, *Met.* 1069b7-f, *Phys.* 201a10-15, and especially *GC* 319b32-a1

⁷¹ I think, in this line of thought, one can read the notoriously famous chapter of the *De Anima*, that is, III.5, where Aristotle, distinguishing the two senses of the mind, the active (agent) and passive (patient), argues that the mind in its *energeia* is separable, impassive, and unmixed, like Anaxagoras does.

reached now reflects the realization of one of the objectives of Aristotle in *De Anima*. In Book I, Aristotle repeatedly complains that the earlier philosophers require the soul to be already in movement, given that for them the soul is the cause of movements that the ensouled living beings exhibit since these beings seem to initiate their own movements (I.2 403b29-30 and 404a25).⁷² Yet, Aristotle claims, a mover needs *not* be in movement in order to move other things: “The art of healing produces health without itself being acted upon in any way by that which is being healed” (Aristotle, *GC* I.7 324a25-b1, trans. 1995).⁷³ So in the case of exercising a certain knowledge, we do not observe a movement or an alteration in the knower during his second transition, but only in the objects of his activity, like in bricks, mortar, etc., as expressed above. And in the case of a sense perception, since we do not observe a shift in the agent, according to Aristotle, I contend, namely since the sense object remains the agent of the second actualization of the sensory capacity of the sentient subject, we see also a realization of Aristotle’s idea in sense perception too, but reversed. In other words, the sense object does not suffer movement or alteration but moves qualitatively the subject’s sense organs during latter’s second transition. Still, we need to talk about here the sentient subject, not the sense object, or, more precisely, about the asymmetry of the second transition that the sentient subject undergoes with the second transition that the knower exhibits.

Unlike those abstracted or induced universals which we, as knowers, can retain for a long time, if not forever, we, as sentient subjects, cannot keep hold of sensible objects as our own so that we could use or exercise them in the same way. It cannot be said that we are first affected by a sensible quality and we perceive it at a

⁷² See also *DA* III.2 426a6-7 and *Phys.* 201a25

⁷³ See also *GC* I.6 323a33-34: “... for we say sometimes that the man who grieves us touches us, but not that we touch him” (Aristotle, trans. 1995).

later time we wish to. Taking a step back, if we could acquire and retain somehow the external particular sense objects in us, it could be possible only in virtue of a certain assimilation of our sense organs to these objects, as our former analysis in the previous section of the present chapter dictates. Yet it is not possible: "... it is unnecessary to say that this is impossible. For who could seriously ask whether there is a stone or a man in the soul?" (Aristotle, *DA* I.5 410a10-13, trans. 1957)

Still, as it appears, in every stage of apprehension or cognition Aristotle requires an assimilation of the subject to the object of apprehension, just as the knower can be a knower in the third sense only if he has formerly been assimilated to a universal judgment or to a piece of knowledge. Aristotle requires this assimilation probably in order to ensure the self-identity of the subject on the grounds that a subject can be intrinsically cognizant only of himself or of his own deeds while being in *energeia*. In this line of thought, we need also an assimilation of a sense organ to a relevant sense object in the case of sense perception. The question that matters to us most is how this assimilation in the sense organ takes place. It takes place either in the way Burnyeat asserts, viz. in a spiritual way, or in the way we argue for, viz. in a real or ordinary way, but surely *not* in both ways one after the other or together, as we will see below. If what Burnyeat means by the spiritual alteration, as he does, is the process through which we, as sentient subjects, become aware of sensible qualities in our environment without having our sense organs assimilated to them in a material way (or else with having our sense organs materially assimilated to them but still without holding at all by these material assimilations any relevance to our perceptual awareness of the sensible qualities), then it is not clear why we, again as sentient subjects, could not be aware of sensible qualities when they are *not* present. Aristotle states explicitly that the presence of a sense object is essential to a sense

perceptual activity, in the above-cited passage from *DA* II.5. Aristotle asserts this because, as I contend here, in his opinion, whereas we do and can exhibit a thinking activity on our own, we cannot exhibit a sense perceptual activity whenever we wish to and without needing a sensible object to act on or alter our sense organ in a material or ordinary way, starting from the very beginning of the activity till its very end.

Burnyeat in his article acknowledges that sense perceptions are short-lived but he does not explain why this is so (1995, p. 19). I think the reason why sense perceptions are short-lived is the fact that for Aristotle the object of sense perception is short-lived affections or assimilative changes that sensible objects ‘cause’ relevant sense organs to have. We have seen that after birth, the only transition that a sentient subject undergoes is the second transition during which he apprehends sensible objects through sense perception. After the process of each of his second transitions, the sentient subject retains, in his common sensorium, a certain trace of the sense perception as its memory. Yet he cannot apprehend this trace again and again through sense perception whenever he wishes to, he at best and at most can remember it, or he may see it in his dream,⁷⁴ or else think of it as a particular manifestation of a universal idea he has formerly induced out of a totality of similar traces to that one: “... when one has knowledge [*episteme*] or sense perception [*aisthesis*] without their actualizations [*energeiai*], then one remembers” (Aristotle, *Mem.* I 449b19-21, trans. 1957, modified).⁷⁵ So, as far as sense perception is

⁷⁴ *Insomn.* III 460b29-a9 In fact according to Aristotle, dream images are not those traces retained in the common sensorium, at least primarily, but they are slight sensible qualities persisted in the sense organs. During daytime, stronger stimuli do not allow the subject to notice the effect of the slighter ones. Yet when the subject falls into sleep and thereby stops sense-perceiving stronger stimuli, the slighter ones come to the surface, or more properly they start to go into the common sensorium to actualize the imaginative capacity, and hence the subject ‘sees’ them in his dream.

⁷⁵ See n66 above.

concerned, the sentient subject is left with the momentary affection in his sense organ, which the sense object causes him to have. The object of a sense activity must be, as it is, the affection or the qualitative change in the sense organ, *not* the trace retained after the sense activity in the common sensorium as a memory. Sense perceptions are short-lived because their presence or occurrence totally depends on the momentary presences and activities of the sense objects over the sense organs. This is what is missing in Burnyeat's account and what Aristotle means to show in his restriction to the analogy made in the above-cited passage.

Comparing the second transitions that we exhibit as sense perceivers and as knowers respectively, we cannot apprehend sensible qualities whenever we wish to in a similar way we can apprehend the induced universals because the alterations or the affections these qualities cause us to have do not stay forever or else for a long time in our sense organs as the universals do in our soul.⁷⁶ We cannot retain these affections for a long time in our sense organs because the particularity and externality of sense objects, which are their defining characteristics, keep them, concretely speaking, apart from acting on our sense organs, as is now evident from the above-cited passage. And their particularity and externality require that we, each time, undergo a different process of actualization of our sensitive capacity in its second sense—different from the process of the actualization of our *hexis* for thinking or knowing a universal idea to which we have already been assimilated. The process of second actualization of our sensitive capacity must be then, as it is, through some material or real alteration caused by a contrariety in quality between our sense organ and a sense object, as we have seen in the previous section of the present thesis. We, as sentient subjects, are bound to the assimilative operations of

⁷⁶ or in our common sensorium. See n66 above

contrary and relevant sensible objects over our sense organs, operations each of which results in a momentary similarity of the latter to the former in quality in a real or ordinary sense. And only through this momentary similarity in our organs can we be in *energeia*, again momentarily, i.e. in sense perception of the sensible objects.

If we illustrate what we think happens in fact in a particular sense perceptual activity, I think we can better show our main contention here that what Aristotle means by alteration (*alloiosis*) occurring in a sense organ during a relevant sense activity is only an ordinary or real alteration. At the very beginning of a sense activity, we, as sentient subjects, quickly⁷⁷ suffer a material alteration or assimilation of our sense organ just due to a specific contrariety in quality between our sense organ and a relevant sense object, the relevance of both of which lies in their being of the same genus. At the very moment of confrontation, for instance when we confront a tree with its red leaves, due to the present contrary quality our pair of seeing organs is in, we start to undergo quickly a material alteration, which results in our seeing organ's similarity in form (or in quality) to the red leaves of the tree: Our seeing organ ends up being red in form just like the leaves of the tree are already red in form.⁷⁸ This can be observed in the phenomenon that when we quickly move our heads and thus our eyes to another direction or when we turn our gaze to something else after looking at bright objects like the sun, we become dazed, so to speak, for a very short time and cannot see things or visible qualities we look at, yet after that

⁷⁷ *Insomn.* II 459b24-f. See also R. Woolf (1999) who employs only this passage from *De Insomniis* to argue for literalism.

⁷⁸ I am staying noncommittal to the question 'whether or not the same predicate can be used both for sense organ and sense object after the moment of assimilation,' e.g., whether or not the organ of seeing can be red 'in the same way as' a leaf is red. V. Caston (2005) argues against this kind of literalism, asserting basically that the sense organ just receives the quality of the object in its proportions during alteration. Even though this idea seems to fit well Aristotle, I decide to remain silent here, especially because I haven't seen so far solid textual proofs for or against it. See also K. Corcilius (2014) for a similar interpretation to Caston's.

tiny moment, we start to see them.⁷⁹ This is so because we need that small moment in order for our sense organ to be able to adapt to them, viz. to suffer assimilation in quality. After that very tiny moment of the process of assimilation, we are now similar to the sense object in its quality or form: We are now in *energeia*, i.e. in sense perceptual activity. Yet this does not mean that the operation or activity of the sense object on our sense organ ceases from that point on, and we take over the process and carry on the *energeia* by ourselves, as Burnyeat's reading suggests. Even if, thanks to our momentary similarity to the sense object in quality, as I think Aristotle implies, we are in *energeia* or in our sense perception of it, we still depend totally on the assimilative operation of the sense object over our sense organ till the end of the sense activity. Unlike the fact that we can and do carry on the process from being the knowers in the second sense to being the knowers in the third sense, and thereby carry on our thinking activity by ourselves, we, as the sentient subjects, still need the sense object to act on our sense organ. Just as the previous affection, caused by the visible quality of our earlier perception, persists for a short while in the seeing organ, in our present sense activity too we continue to be in sense perceptual activity, for a while more, after the sense object goes out of our perceptual field for some reason. Aristotle asserts this because the affection in the sense organ caused by the sensible object cannot go away so quickly. Even though the matter of sense organs is a special one, thanks to which they are very keen to or receptive of sensible qualities, these organs are still material objects and they need some time, even if a very short time, to go back to their original position after the sense object goes away and thus its effect ceases to be operative. I think it is evident now that throughout each of our sense perceptual activities, we need the assimilative and ongoing operations of

⁷⁹ See *Insomn.* II 459b6-24 for Aristotle's different examples of this phenomenon

sensible objects over our sense organs. This shows that in sense perception, even though we momentarily seem to be ‘agents’ of our sense perceptual activity in the sense that at that point we are similar to a sensible object and thus are in *energeia*, we still need the sensible object to keep our sense organ *altered* by its activity as far as our sense perception of it goes on.

Further support to our present contention comes from *DA* III.4 429a10-f., where Aristotle compares again thinking activity with sense perceptual activity as an introduction to his full analysis of the mind or thinking activity in the succeeding section of *De Anima*. He argues that our sense organs get tired and lose their precision after receiving extreme movements or stimulations coming from some sensible objects, such as too loud sounds, bright colors, and strong smells. Yet when it comes to thinking, he asserts that our thinking activity in its *energeia* becomes keener or more precise especially after apprehending highly or extremely intelligible objects. This is so because, he argues, our thinking activity in its *energeia*, i.e. in its second transition, does not depend on matter or body whereas our sensitive activities do: “... it is unreasonable to suppose that it [mind] is mixed with the body; for in that case it would become somehow qualitative, e.g., hot or cold, or would have some organ, as the sensitive faculty has; but in fact it has none” (Aristotle, *DA* III.4, 429a19-22, trans. 1957). Our concern is not here to show how thinking activities can be realized in the second sense without some accompanying material processes, which is an idea that I believe Aristotle asserts primarily against the Empedoclean and the Atomistic reductionism or identification of thinking with sense perception about which he complains everywhere in his corpus.⁸⁰ This passage, i.e. *DA* III.4, shows clearly that we are right in contending that for Aristotle sense perceptual

⁸⁰ See, e.g., *Met.* IV.5 1009b13-14: “... they [Empedocles, Democritus, and all the rest] suppose that thought is sense perception, and sense perception alteration ...” (Aristotle, trans. 1961, modified).

activities are psychological events accompanied throughout by the alterations or affections in the sense organs. This contention of ours is also confirmed by another treatise, *De Somno*, where Aristotle states that sleep occurs because of two reasons: We sleep either because when we eat something, the food creates an extensive amount of heat in our blood, which in turn causes the food taken in to go upwards to our brain, the cooling organ. And when the food taken in arrives at the cooling organ, it creates a heaviness in the upper parts of our body and thereby causes us to nod or sleep until the moderate temperature of our body or blood is regained (*Somn.* III 457b20-a10). Besides this, sleep occurs because our sense organs get tired and lose their precision after suffering innumerable many operations of sense objects all the day and thus we find ourselves in need of letting them rest so that they could recover their precision.⁸¹ So, I think all these textual proofs show that we are right in arguing that Aristotle takes the second transition that a sense perceiver undergoes to be ordinary or real alteration.

To outline all the points we have arrived at up to now and to conclude, Myles Burnyeat in his reading fails to present a complete analysis of the analogy that Aristotle makes in *DA* II.5. He fails because he does not take into account the restriction Aristotle places in the analogy in the subsequent lines in the same section of *De Anima*. By ignoring the restriction and thus over-stretching the analogy, he concludes mistakenly that the processes of second actualization of the thinking capacity and sensitive capacity are analogous to each other. And by taking them as analogous, he himself makes, again erroneously, the second actualization of the sensitive capacity to be a process through which a sentient subject does not need to

⁸¹ See *Somn.* I 454a26-29: “For all the parts which have a natural function [*ergon kata physin*], when they overpass the period for which they are able to perform their function, they become exhausted; e.g., the eyes must become exhausted with seeing, and cease to see, ...” (Aristotle, trans. 1957).

undergo any ordinary or real alteration but only a spiritual one. Yet the truth is as follows: When Aristotle states that actual sense perception (*energeia*) is analogous to the exercise of knowledge (*theorein*), he means to say only, and nothing else, that they are analogous to each other just in the sense that in the moment of their respective *energeia* (activity) they are both similar to their respective object of apprehension, because, as argued before, only in virtue of this similarity can a subject be in a psychic activity of apprehension. He certainly does *not* mean that the processes of second actualization or of second transition are analogous in both cases. As I think we have sufficiently shown in the preceding pages, the sense perceiver's first transition takes place while in the womb. And after birth, the only transition he can have is his second transition through which he suffers ordinary or genuine material alteration, in his confrontations with relevant and contrary sensible objects. Besides, after similar traces or percepts, left after ordinary alterations, reach a certain number in his common sensorium, the sense perceiver's second transition is also the knower's first transition. As stated before, they coincide or overlap with each other because there is no other way for the knower to arrive at the universal ideas except through sense perception. And finally, the knower's second transition is a cognitive extension or a continuation, so to speak, carried out solely by the knower thanks to the universal judgments he himself makes out of the traces, left in the common sensorium after numerous sense perceptions, during his first transition. When Aristotle states that the knower in his first transition suffers a series of alterations and extinction of one of a pair of contraries and its replacement by the other member of the pair, he talks just about those alterations that take place in his repeated sense perceptions of enmattered and varying sensible manifestations of a certain universal being. I think it is evident now that in these sense perceptions no spiritual alterations

occur in sense organs, rather in Aristotle's account there is only one kind of alteration and this alteration takes place, like any other alteration in nature, because of a momentary qualitative contrariety between a sense organ and a relevant sense object.

3.3 *De Anima* II.12 and the mean thesis

There is one last point we haven't touched upon yet. We have seen, towards the end of the previous chapter of the present thesis, that as a confirmation of his spiritualist reading, Myles F. Burnyeat makes use of an assertion that Aristotle makes in *DA* II.12 424a18-19: "... the sense (*aisthesis*) is that which is receptive of the forms of sensible objects without their matter" (trans. 1957). We need to face it here and develop our own interpretation of the assertion since it is one of the points of reference towards which each party in the main debate appears to have gotten positioned. Before proceeding to establishing our own position, we will first put again into words Burnyeat's interpretation of the assertion. After that, we will take the first step towards establishing our own reading of the assertion by making a quick expository analysis of the kinds of sensible objects, and their process of acting upon the sense organs. Then, we will go on to make a detailed mention of Aristotle's mean thesis, of the idea that sense organs occupy a middle (or neutral) position or quality in between relevant extreme sensible qualities. Having done all this, we will conclude again that the process of each sense perceptual activity is accompanied throughout by an assimilative activity of a sensible object over a relevant sense organ in an *ordinary* way only, contrary to what Burnyeat in his reading argues.

As we have seen before, Burnyeat argues that Aristotle's assertion in *DA* II.12, i.e. 'reception of forms of sense objects without their matter,' means nothing else than that during a sense activity the subject becomes spiritually aware of a sensible object in his environment without having his relevant sense organ assimilated to the object bearing the quality in an ordinary way. He states that a sense organ's receiving the form of a thing *without* its matter just means the former's becoming like the latter in form but *not* in matter. And in the same line of thought, Burnyeat continues, 'receiving the form of a thing *with* its matter' (i.e. the alteration which Aristotle, in the same section of *De Anima* in question, asserts insentient beings like air and plants suffer) must then mean an insentient being's becoming like the thing both in form and in matter. Hence, he concludes, 'becoming like in form but not in matter' should designate a sentient subject's undergoing only spiritual assimilative alteration whereas 'becoming like both in form and in matter' should refer to an insentient being's undergoing ordinary assimilative alteration. For Aristotle the sentient subject, Burnyeat argues, has a capacity, through spiritual actualization of which the subject becomes aware of sensible qualities, yet insentient beings have no such capacity. Even though it is not clear due to an ambiguity in Burnyeat's phraseology,⁸² we may state, what Burnyeat means is in essence that while it can be said that the sense organs, being material, become like relevant sensible objects also in an ordinary way, this ordinary assimilation does not hold any relevance to the subject's spiritual assimilation through which he becomes aware of sensible objects.

Now even if Burnyeat's explication of the phrase 'reception of a sensible form with matter' seems correct, his reading of the phrase 'reception of a sensible

⁸² 1995, p. 20: "... the physical material of which Aristotelian sense-organs are made does not need to undergo any ordinary physical change to become aware of a color or a smell."

form without matter' is clearly mistaken. It is mistaken because, as we have sufficiently shown, in Aristotle there is only one sort of alteration and this is the alteration that occurs in a material being only due to its having a relevant contrary quality to the quality of another material being, i.e. ordinary alteration. And there is no further suggestion in Aristotle that the alteration the sense organs suffer is an exception. There is no suggestion to consider the process of actualization of an already possessed sensitive capacity as a spiritual alteration because, as seen, the sentient subject in his second transitions suffers only ordinary alterations, through which his sense organs become assimilated to sense objects in quality, and thanks to which he ends up having a momentary similarity to his objects of apprehension and thereby can sense-perceive them (*energeia*). That is why Aristotle repeatedly states, "... actual sensation [*aisthesis kat' energeian*] is a motion [*kinesis*] through the body ..." (*Phys.*VII.2 244b18, trans. 1995).⁸³ In actualizations of the sensory capacity there is always some accompanying physical material process and this cannot be just a contingent accompaniment. What is next is to strengthen our position by showing the whole physical material accompanying process of sensible objects' acting upon or altering relevant sense organs, in a detailed manner. Through this I hope that we will have covered a distance in developing our own explication of the phrase 'reception of a sensible form without matter.'

As far as I can see, Myles Burnyeat's explication of the phrase in *DA* II.12 misses the fact that this section of *De Anima* is a sort of conclusion of the whole account of sense perception that Aristotle tries to establish from II.5 on. If so, as I contend it is, we need first to summarize the basic features of his account of sense perception before we proceed to explicating the phrase in accordance with the

⁸³ See also *Somn.* 454a9-10: "... what we call sensation, as actuality [*energeia*], is a movement [*kinesis*] of the soul through the agency of the body ..." (Aristotle, trans. 1957).

findings that we have arrived at with our reading of *DA* II.5 in the previous section of the present thesis. Only in this way, I think, can we ‘demystify’ the phrase in II.12, which Burnyeat calls “mysterious” in a negative manner,⁸⁴ if the phrase were ever so. Aristotle in II.6 418a6-26 asserts that there are three kinds of sensible objects (*aistheta*): special, common, and incidental sensibles.⁸⁵ Like the common ones, special sensibles are *per se* or proper⁸⁶ (*kath auta*) objects of sense perception, meaning that they act on or alter sense organs during a sense activity. Corresponding to the five sense organs (*aistheteria*) and five sense modalities or types of sense perception, there are also five types of special sensibles: the visible (colors), the audible (sounds), the smellable (odors), the tastable (flavors) and the tangible (temperatures, dryness, hardness, etc.). They are called ‘special’ (*idia*) because each type can and does act on *only* one of the five sense organs, e.g., colors act only on the seeing organ, sounds only on the hearing organ—an idea apparently borrowed from Empedocles. As said, common sensibles are also *per se* objects of sense perception.⁸⁷ They are listed as movement and rest, unity and plurality or continuity and discontinuity (number), shape (figure, *schema*), and size (magnitude).⁸⁸ And they

⁸⁴ 1995, p. 17

⁸⁵ See also *DA* III.1 425a14-b12, III.2 426b9-f, III.3 428a18-30, and *SS* I 437a4-f.

⁸⁶ I am here following Cashdollar (1973) who contrast the proper sensibles (which includes special sensibles and common sensibles) with incidental sensibles (p. 157 and 157 n6). Accordingly, as will be seen, I render the term ‘*idion*’ as ‘special’ and ‘*koinon*’ as ‘common’ under the general term ‘proper’ or ‘per se’ (*kath auta*). In this respect, I find also it very misleading to translate, like in Block (1960) does, the term ‘*kath auta*’ as ‘directly’ and the term ‘*kata symbebekos*’ as ‘indirectly.’ I will call the former ‘per se’ and the latter ‘incidental.’

⁸⁷ Contrary to D. W. Ross and Hamlyn, who claim erroneously that common sensibles are not principal of objects of special sense organs but of common sense organ. See, e.g., Ross (1995, p. 147-148). See also Kahn (1979) for a detailed argument against such a reading of common sensibles that Ross and others offer (p. 63-64).

⁸⁸ Ross adds to this list ‘time’ (1995, p. 148). His way of thinking is possibly as follows: If the perception of common sensibles is an act of common sense capacity and if “time” is said to be cognized by the common sense capacity, then ‘time’ also should be in the ‘list.’ Yet even if Aristotle says explicitly that ‘time’ is cognized through an actualization of common or primary sense capacity (*Mem.* 449b29-30), common sensibles, as we expressed in the previous note, are perceived *not* through common sense organ but special sense organs, like organ of seeing or of touching. Therefore, ‘time’ should not be added to the list of common sensibles.

owe the name ‘common’ (*koina*) to the fact that they pertain to more than one sense modality, if not to all of them. For instance, a shape is both visible and tangible, as a magnitude is. And the last one is incidental sensibles. They are called ‘incidental’ or ‘coincidental’ (*kata symbebekota*) because their relation to *per se* sensibles is incidental or contingent. In other words, incidental sensibles do not act on sense organs in virtue of being whatever they are but only in virtue of having special and common sensibles, only which have, being *per se* objects, causal power to act on and thus alter sense organs. For instance, Diares’ son does not act on the seeing organ as far as he is the son of Diares but as far as he is pale or white, i.e. an object of seeing.⁸⁹ Or as Martha Nussbaum writes, “... when we perceive a rose by sight, it is not the rose *qua* rose, but the rose *qua* white that acts upon our sight” (1985, p. 259). Yet the son’s being a pale face or the rose’s being white is just a contingent fact, and the name ‘incidental’ is derived from this fact.⁹⁰ On the other hand, as we have seen in the previous section of the thesis, Aristotle sometimes, as in *APo*, II.19 above, speaks of incidental sensibles as if they were *per se* objects of sense activities. He does this because, I think, we do not perceive color patches, smells fluttering around, movements, or shapes without being realized in some material substrata (*hypokeimena*) but we perceive these *per se* sensible qualities in a unified and enmattered way, thanks to the final unifying (and discriminating) acts of our common or primary sense capacity whose organ is placed by nature somewhere around the heart—“common sensorium,” as C. H. Kahn calls its organ (1979, p. 74). So even if the relation between *per se* sensibles and material substrata is incidental or

⁸⁹ *DA* II.6 418a24: “Hence the percipient is not acted upon by the thing perceived as such [as the son of Diares]” (Aristotle, trans. 1957).

⁹⁰ On this issue, see especially Owens (1982) who provides a comprehensive account of the criterion for a sensible to be a *per se* object or an incidental one, through making a survey of the works of the Greek commentators of Aristotle such as Themistius, Philoponus, and Simplicius.

contingent, they together constitute being ‘standard’ objects of our sense activities.⁹¹ That is the most probable reason why Aristotle speaks of incidental objects as if they were *per se* sensibles.

Next, in regard to the assimilative activity of these *per se* sensibles over sense organs in Aristotle, we need to state in advance that this activity or acting upon (*poiein*) does not take place ‘miraculously,’ so to speak, as Burnyeat’s reading suggests especially in his taking the object of sense perception as *not* the alterations or affections that sensible qualities cause their respective sense organs to have but as sensible qualities in the subject’s environment. The assimilative activities of sensible objects over sense organs occur always through some material media (*ta metaxu*), like air and water: “We sense-perceive all things through a medium” (Aristotle, *DA* II.11 423b8, trans. 1957). A sensible object acts upon a relevant medium and the medium, being temporally qualified, in turn acts upon the relevant sense organ. This is the chain of causation whose continuity must be supplied before a qualitative movement is going to occur in a sense organ.⁹² In an alteration (*alloiosis*) like the one that takes place during a sense perceptual activity, there must be a certain material medium, like the air, between that which alters and that which is altered, otherwise the efficacy of the causal activity cannot be granted. For instance, in an act of seeing, when the visible or colored is in *energeia* (in activity), it starts to act upon its proper medium, i.e. the air (secondarily the water), as far as the air is also in activity, that is, as far as the transparent nature (*diaphanes*) of the air is already

⁹¹ See Block (1960) who asserts in sum, basing his argument upon a passage from *De Insomniis* II, that even if we perceive only *per se* sensibles but *not* the “physical objects” to which these sensibles belong, our common or controlling sense capacity “objectifies” the sensibles or gives them “objective” references.

⁹² *Phys.* VII.2 244b3: “Nor again is there anything intermediate between that which undergoes and that which causes alteration” (Aristotle, trans. 1995). See also Corcilius (2014) for a discussion of this causal chain of assimilative alteration, proceeding from a sensible object till to the sense perceiver (p. 35-36).

actualized by light. So when the colored and the air are both in *energeia*, the former moves qualitatively the latter, and the latter in turn moves or alters the watery substance inside the peripheral organ of seeing, i.e. the eye-jelly, so to speak. And from that point on, through some channels or passages (*poroi*) inside the body, which connects the watery substance inside the eye to the place around the heart by blood or some warm substance,⁹³ the qualitative movement or affection goes on to reach the common sensorium. Besides, an external medium can and does move qualitatively a sense organ only in virtue of being homogenous to the latter. When Aristotle states, "... the air is physically one with the organ of hearing; and since this organ of hearing is in the air, when the air outside is moved, the air inside [the organ] is moved too," he just tries to ground the relevance, at least on an elemental level, of the medium to the organ in order to ensure the possibility of their causal interactions (*DA* II.8 420a5-6, trans. 1957). The passages from his corpus⁹⁴ in which Aristotle, like the earlier physiologists, tries to account for the genesis of sense organs by referring to some elemental body, should be read in accordance with this idea of establishing some physical material relevance between sense organs and their media (and probably their sense objects).⁹⁵

The question that concerns us most here is how the sense organs receive this activity or assimilative alteration of *per se* sensibles, for its resolution will finally lead us to the explication of the phrase in *DA* II.12, i.e. 'reception of forms of sense objects without their matter.' We are told in the last paragraph of *DA* II.11 that a

⁹³ See Webb (1982) who asserts with a detailed argument that the sense affection in an organ is transmitted to the common sensorium not through blood but through some connatural warm substance (*symphyton pneuma*), which also moves in the blood vessels (*poroi*) (p. 27-34). Cf. also n55 above

⁹⁴ Such as *DA* III.1, *DA* III.12-13, *SS* II. See also *PA* II.1 647a12-13: "... they [the physiologists] couple each separate sense organ with a separate element, asserting this one to be air and that other to be fire" (Aristotle, trans. 1995).

⁹⁵ See also Bos (2011) for a detailed account of this homogeneity and heterogeneity issue (p. 31-34).

sense organ can and does become assimilated to a sensible object (especially a special sensible) only because the organ occupies a mean position when compared to the sensible and its contrary. Just for the sake of presenting Aristotle's view clearly, especially with respect to the old question of similarity and contrariety between a subject and a sensible object, we have spoken so far of sense organs as if they also had an extreme contrary quality before a sensitive activity. The truth is that according to Aristotle before a sense activity ensues, a sense organ stays qualitatively in a middle (or neutral) position in between a pair of contrary sensibles, like between hot and cold or between white and black. For him, each sensible object within a sense modality is a product of a certain mixture of contraries. For example, each color is in fact a juxtaposition of a piece of white matter and black one in a certain proportion.⁹⁶ And in the same way, each sound is a mixture of high and low pitch in a certain ratio, an odor or a flavor is of sweet and bitter, and a tangible quality is of either hot and cold, or dry and wet, or soft and hard, etc.⁹⁷ Hence each sensible object is a certain mixture of its relevant extreme contraries. And corresponding to this, each sense organ also occupies originally a middle (or a neutral) position in relation to the two extremities of its relevant sensible quality. The organ of touch, for instance, originally stays in a moderate or mean temperature, the organ of sight is in

⁹⁶ See SS III 439b20-440b25 Aristotle does not believe that colors as qualities can be mixed with each other. After criticizing two prevailing theories of the genesis of colors, i.e. juxtaposition (mixture) thesis and superposition thesis, he apparently adopts the juxtaposition thesis with a reservation that colors as qualities must be present in some material substrata before mixed with each other.

⁹⁷ These contraries seem to borrow their names from their 'phenomenal qualities' in our experiences, so to say, for instance sweet and bitter. Even if so, we should not think that Aristotle's account were based on these phenomenal experiences, he instead speaks of them here only with causal terms. See Corcilius (2014) who argues that in Aristotle the sensibles refer to the phenomenal content of our sense activities and also to the (efficient) cause of these sense activities of ours (p. 34). Cf. Sorabji (1971) who asserts in a similar fashion that in a definition of sense perception, e.g., of sight, the sense object is included because the sense object also refers to 'the character of our experience' of it (p. 66-67).

a colorless, or very slightly colored,⁹⁸ position. And thanks to being in a mean position, each sense organ is susceptible to its relevant extreme contraries, or, more precisely, to all of its relevant sensible qualities, which either exceed the organ's mean quality or fall short of it.

This idea of the mean position of sense organs tells us three significant things concerning the main discussion of the present section. First, it supplies the final explanation of Aristotle's idea in *DA* II.5 that the existence of sense organs is analogous to the existence of fuel, viz. a potential existence. The sense organs are not excited by their composing elements such as fire and earth, even if these elemental bodies are normally capable of exciting (or altering) sense organs, because the sense organs in their original mean positions are like themselves. And, as expressed repeatedly, in Aristotle's opinion the likes cannot affect or excite each other. That is why he states, "... we have no sense perception of what is as hot, cold, hard, or soft as we are but only what is more so, ..." (*DA* II.11, 424a2-4, trans. 1957).⁹⁹ When a sense organ confronts a relevant sensible like itself, there won't be an alteration or excitement in it. Yet, since the organ originally occupies a middle (or neutral) position in relation to two opposing excesses of a relevant sensible quality, it has the potentiality or capacity to go into each direction, i.e. to be like one of the excesses

⁹⁸ I read the qualification in the phrase "that which sees is in a way colored" (Aristotle, *DA* III.2 425b23-24, own translation) to mean that in its original position, the sense organ is not totally colorless but slightly colored. I think here what Aristotle means is that in virtue of having a slight color in its mean position, the seeing organ sees itself in its self-reflexive activities. See also *DA* II.9 422a 20-f., and cf. *Somn.* II 455a14-f. where Aristotle assigns the self-reflexive activity of sense perception not to the specialized senses themselves but to the common sense.

⁹⁹ See also *Metr.* IV.4 382a16-21: "Degrees of hardness and softness are indefinable with relation to each other; but since we judge [*krinomen*] all sensible qualities by sensation, it is clear that both hard and soft are defined absolutely with reference to touch, which we use as a mean [*hos mesoteti*] saying that what exceeds it [*hyperballon*] is hard and what falls short of it [*elleipon*] is soft" (Aristotle, trans. 1952).

each time.¹⁰⁰ In this respect, while each of the two opposing excessive pairs of a sensible quality has an actual existence, a relevant sense organ has only a potential existence in virtue of having a mean quality. Hence when they are confronted with each other, the actually existing sensible actualizes the potentiality of the organ, and the latter in turn ends up having the same quality as, or else similar to, that of the former. The sensible activity of the object and the sensitive activity of the organ overlap with each other to become one activity (*energeia*): “The activity of the sensible object and of the sensation is one and the same, though their essence [*to einai*] is not the same” (Aristotle, *DA* III.2 425b26-28, trans. 1957).

Second, the mean thesis also shows a peculiarity of sense organs when compared to insentient beings, especially to plants: They always try to go back to their respective original mean position. Just after an assimilative activity of a relevant sensible object over it, a sense organ ends up being an extreme in quality as the sensible already is, it loses momentarily its middle (or neutral) position. Yet having a peculiar nature of the elemental substance out of which it is naturally composed, e.g., the seeing organ’s ‘watery’ substance or the hearing organ’s ‘airy’ substance, the organ always seeks for its original mean position. In other words, after the sense organ becomes altered and thus qualified, the quality does not stay in the sense organ due to the peculiarity of its elemental nature. And, so to speak, thanks to this natural ‘urge’ that a sense organ possesses to preserve its original mean position (or receptive capacity) against the ‘force’ that a relevant sense object applies to it to receive its qualitative excess, in the next episode of sensitive activity, the organ can be quickly altered and qualified by another relevant sensible object. This is what is missing in insentient beings, namely such as natural or artificial inanimate beings

¹⁰⁰ Not both of the extremities simultaneously. See *SS* VII 447b18-20: “... it is not possible to perceive two objects at once with single sense” (Aristotle, trans. 1957).

like rock, iron, or table, chair, etc., certain parts of the body of a sentient being like hair, sinews, bones, etc.,¹⁰¹ and surely plants that are said elsewhere to be animate but to have only nutritive capacity.¹⁰² Contrary to what Burnyeat argues, these insentient beings suffer the same ordinary or real alteration as each sense organ does in virtue of being material, yet because of their elemental nature, they cannot go back to their previous position after an alteration as quickly as the sense organs can. Aristotle asserts that these insentient beings are made out of the element ‘earth,’ or mostly of the earth.¹⁰³ This is one of the physical material differences between the sentient beings and insentient ones that Aristotle supplies in order to account for their functional difference—viz. the former being able to sense perceive their alterations and the latter being unable to do so. It seems that there are structural differences as well.¹⁰⁴ Yet here our concern is not to provide an account of the relation between material processes and psychological ones, like sense perception. Rather, we are just trying to ground that there is always some physical material processes accompanying sense perceptual activities, as opposed to what Burnyeat in his reading asserts. In this regard, we need also to explain why certain other insentient beings such as the external media, e.g., air or water, do not also exhibit sensitive activity since they are of the same elemental substances out of which the sense organs are constructed by nature. In *DA* II.12 424a14-f., Aristotle states that even if these media are also altered and thus qualified by certain sensibles such as color, sound, and smell, since they are

¹⁰¹ *DA* 410b1 and 435b1

¹⁰² Such as in *DA* II.2 413a26-b1

¹⁰³ See *DA* III.13 435a25-b2: “... we do not perceive by our bones and hair, and such parts of the body because they are composed of earth. And for this reason plants have no sensation because they are composed of earth” (Aristotle, trans. 1957). See also *Metr.* IV.10 for a discussion of natural bodies that include ‘earth’ in their compositions

¹⁰⁴ See *PA* I.4 644b8-9: “It is generally similarity in the shape of particular organs, or of the whole body, that has determined the formation of the larger groups” (Aristotle, trans. 1995). And see *DA* II.4 416a5-6: “... if we are to identify and distinguish organs by their functions [*erga*]” (Aristotle, trans. 1957). See also *PA* 645b-15 and *HA* 588a15-b3

‘without boundaries’ (*aorista*), the qualification or affection does not stay (*ou menei*) in them as long as it does in the respective sense organs, namely in the seeing, hearing and smelling organs. Inside the peripheral organ of seeing, i.e. eye, for instance, some watery substance is enclosed and likewise inside the ear, some air is trapped. Their enclosure provides the ground of the possibility for the sense organs to keep the affections for a long while, longer than the unbounded media in which the affections remain only temporarily (*tacheos*) and abruptly get dissipated or scattered around. Still, in the meantime we need to notice, thanks to their fragility or incapability as such, the unbounded media do not obstruct the operations of sense organs to receive the differences of their relevant sensible qualities. Therefore, the mean thesis explains also how sense organs can preserve their receptive capacity after the alterations that sensible objects cause them to undergo. It explains the peculiarity that in the sense organs the affections remain for a time lesser than in some ‘earthy’ insentient beings and longer than in some other ‘unbounded’ insentient beings, probably enough to be identified with a sensible so as to be in a psychic activity (*energeia*) as in sense perception of the sensible.¹⁰⁵

Third, this brings us to another peculiarity of the sense organs, which will eventually relate our discussion to the explication of the phrase of *DA* II.12. The idea that sense organs have a natural urge to go back to their original mean position highlights the fact that they are able to protect themselves from destructive effects or affections caused by extreme sensible objects. In *DA* II.9 422a20-f., we are told that

¹⁰⁵ We haven’t provided here another possible account for the physical material difference that sentient beings have from insentient ones. Since in *GA* II.3, Aristotle argues basically that the material base of the presence of life and especially of cognition should be sought for in the connatural vital heat, of which both the celestial beings and the animate ones in the sublunar world have a share. Perhaps this heat, kept always inside the sentient body as a separate source of the heat other than fire, does this job of rebalancing the mean position of a sense organ after its each alteration. Yet this does not explain why plants do not exhibit sense perception, after all they have also a share in life no less than others do. This connatural heat can still be taken to be a contributory cause of the process of the organ’s regaining its mean quality. See n55 and n93 above

each sense modality does in fact deal both with its relevant sensible objects and the opposites of them.¹⁰⁶ For instance, sight deals with the visible and the invisible; hearing is concerned both with the audible and inaudible, and the touch with the tangible and intangible. However, in the realm of sense perception, these opposites should not be taken to designate the absence of the relevant qualities, they rather mean to designate either a slight presence of a certain sensible quality or else an abundant presence of it. The term ‘the invisible,’ for example, either means to refer to the very slightly visible, e.g., darkness, or to the extremely visible, e.g., too bright objects like the sun. Likewise, ‘the inaudible’ either refers to the slightly audible, e.g., silence, or refers to the extremely audible, e.g., too loud sounds. And ‘the intangible’ refers either to the slightly tangible, e.g., air or sponge, or to the extremely tangible, e.g., ice cold or too hot like the sun, again. Now it is not certain that slightly perceptible objects like darkness or silence can destroy their corresponding sense organs’ receptive capacity for a while or for good; however the extremely perceptible objects do and can surely destroy them.¹⁰⁷ Aristotle asserts that extremities in sensible qualities are destructive of their relevant sense organs’ receptive capacity—an idea apparently taken from Anaxagoras as we have seen before. In a similar fashion, he closes the section preceding *DA* II.12 by claiming that in a sense perceptual activity, when the qualitative change in the relevant sense organ goes too far because of the extreme excess in the sensible quality, the organ loses its receptive capacity.

Now there is no reason for us *not* to read this final claim of *DA* II.11 in conjunction with the first assertion of *DA* II.12, i.e. the sense organ is receptive of sensible forms without their matter. In other words, since the last section of Book II

¹⁰⁶ See also *DA* III.2 425b23-24 and see n98 above

¹⁰⁷ See also *DA* III.2 426a30-b4 and *DA* III.13 435b8-19

appears to be a sort of conclusion or summary of the findings that Aristotle gathers from his analyses of sense perception (*aisthesis*) in general, analyses starting off from section 5 of Book II onwards, we do not need to and should not take the phrase ‘reception of sensible forms without matter’ in isolation. I believe the “mystery” over the phrase directly comes from such isolated readings of it, such as from the one Burnyeat apparently makes. He does not take into account that the phrase is in fact about the sense organ’s mean position, or, more precisely, about a peculiarity of sense organs rooted in their occupying a mean position in relation to opposing pairs of potentially destructive sensible qualities. When a sense organ is confronted with extreme excess in a relevant sensible object, the qualitative change in the organ goes to an extreme direction correspondingly, which can in turn either destroy its capacity permanently or make it inoperative for a while. By means of example, after we look at the sun, we cannot see other things for a time. Despite this, as seen, the sense organ has a natural tendency to preserve its receptive capacity by trying to go back to its previous and original mean position. In this way, one can readily infer that a sentient subject can receive, in his sense organ, relevant sensible qualities or forms ‘within a certain range’ because, as opposed to insentient beings, in seeking always to regain its mean position in an appropriate time, his sense organ can keep itself safe from destructive effects of extremely excessive sensible qualities. On the other hand, in their interactions with each other, insentient beings, or rather those of an ‘earthy’ nature, are totally vulnerable to such extreme assimilative effects in quality. When they are confronted with an extremely excessive quality, they can be destroyed altogether.

I believe this is the idea that lies behind the phrases ‘reception of the forms without matter’ and ‘reception of the forms with the matter.’ I think our mind is

clouded too much with the analogy in the same section of *De Anima* that Aristotle makes between the reception of sensible forms by the sense organs and the reception of an impression by a block of wax. Aristotle claims that when a sense organ receives the form of a sense object, there occurs an identity between the sense organ and the sense object. Yet, he qualifies the claim, this identity should be taken only in form *not* in matter. Analogically, he continues, when a signet ring is pressed upon a block of wax, the wax becomes identical to the ring only in form, viz. it receives the same shape as an impression or mark (*semeion*), but *not* in matter, viz. it does not become a gold or bronze ring. That is the end of the analogical extension. If we were to stretch the analogy to cover also insentient beings, we would end up with such a false line of reasoning that since Aristotle himself states in the same passage that insentient beings are affected by both form and matter of the objects they confront, they become identical to them both in form and in matter, e.g., they become a gold signet ring. However, it is evident that Aristotle does not talk about converting things into each other, not about something like alchemy there. Nor does he try to provide there an argument against the Empedoclean idea that sense objects emit some ‘material’ particles or effluences (*aporrhoeai*) to fill in relevant sensory organs, contrary to R. Sorabji’s aforementioned view. What Aristotle means to say by the phrase ‘reception of sensible forms without matter’ is just that in order for a sentient subject to be able to have sense perception of an alteration in his sense organ, the alteration must be within a certain range. To put in precise terms, Aristotle here, I contend, talks about the degrees of alteration: There is only one kind of alteration, i.e. ordinary alteration, but still its degrees may differ. When and if the alteration or affection goes beyond a certain limit, the sense organ gets destroyed permanently or else for a while, depending on the excessive extremity of the affection or else on the

period of the persistence of the affection in the organ. In such a case, as it is obvious, there won't be a sense activity. Hence, the phrase 'reception of form without matter' means to refer to this idea of the alteration's staying within the limit. This limit is determined not only by extremities in a relevant sensible object but also by the sense organ's self-protective natural urge to go back to its mean position. In this respect, whereas in virtue of this natural urge sense organs can protect themselves against the destructive operations of extremely excessive sense objects, insentient beings, lacking such a self-protective principle (*arche*), stay totally passive in receiving such operations. They can be altered and thus affected both in form and matter by a thing because they can in a passive way receive a quality so persistently and excessively that their material constitution be destroyed altogether, e.g., be broken, rotten, or burned. In other words, when they undergo an excessive (and persistent) alteration, they can show a change not only in their forms but also in their matter. This is the idea behind the two phrases of *DA* II.12, the idea that there is only ordinary or real alterations taking place both in sentient and insentient material beings but the degree of their affection can show difference.

Furthermore, this view of ours is also supported with another closely-related idea of Aristotle's in the same section of *De Anima*, i.e. II.12 424a29-34: Each sense organ constitutes being a certain ratio (*logos*). Just as each sensible quality within a sense modality is in fact a combination of two opposing extreme qualities in a certain proportion; before an alteration accompanying a sense activity, each sense organ also has a certain quality, which stays exactly in the middle of its relevant opposing sensible qualities. The quality that the sense organ possesses originally is a perfect ratio of these two opposing qualities, thanks to which it is receptive of all the differences in relevant sensible qualities, except of the quality that it also already

possesses. When the sense organ receives each of these qualities within a certain range, it functions as it is meant to by nature. Yet, when it receives an excessive one, like too bright colors, too loud sounds, too bitter flavors, or else too warm objects, it loses its original ratio either temporally or permanently—in the latter case either the organ's receptive capacity may be lost altogether or further the organ itself may be destroyed, e.g. burned or injured. What is time to time possible for the sense organs is always possible for insentient beings because insentient beings do not have such an always-pursued ratio. Or, more precisely, even if they have, they do not have a natural tendency to turn back to their previous ratio, after an alteration, in an appropriate time so that they could protect themselves from destructive effects of excessive qualities or from long-term operations of these qualities.

Therefore, when Myles F. Burnyeat in his account employs the phrases in *DA* II.12 in order to confirm his spiritualist reading of the second actualization of a subject's sensitive capacity, he is in fact making another mistake. When Aristotle states that sentient beings receive the forms of sensible objects without their matter, he does not mean that during this process of reception, sentient subjects undergo a completely different kind of alteration such as spiritual alteration. What Aristotle means to say in fact is that in order for a subject to have a sense perception, the accompanying alteration in his sense organ must take place within a certain range. As shown previously, the phrase 'reception of sensible forms without matter' is a continuation of the mean thesis explicated just in the last paragraph of the preceding section of *De Anima*, i.e. II.11. And being so, the phrase must be read in accordance with this thesis, as we have done so far. When Burnyeat takes 'the reception of the form without matter' to mean the subject's undergoing unordinary or spiritual alteration through which he becomes aware of sensible qualities and 'the reception of

the form with matter' to refer to the process of an insentient being's suffering ordinary alteration, he makes the connection between the last two sections of Book II of *De Anima* disappear. Yet the connection proves our contention that for Aristotle there is only one sort of alteration, which is ordinary or real alteration. And even if all sentient and insentient material beings invariably suffer only one sort of alteration, i.e. ordinary alteration, in their confrontations with other material beings having relevant contrary qualities, the alterations they suffer can be different in degree. If an alteration takes place within a certain range in a sense organ, a sentient subject can have a sense perception of it. If the alteration goes beyond the range, the sense organ (or its capacity) may be altogether destroyed or temporarily become inoperative, and in such a case surely there won't be a sense perception. This is what happens to insentient beings most of the time. Burnyeat calls the phrase of II.12 of *De Anima* mysterious but it is now clear that he himself takes it as mysterious, not Aristotle.

CHAPTER 4

CONCLUSION

The present thesis has demonstrated that contrary to what Myles F. Burnyeat argues, in Aristotle there is only one kind of alteration, which is ordinary or real alteration, and it takes place both in sentient beings and insentient beings thanks to a presence of a contrary but relevant quality in each of them to the quality of the object each confronts. The only possible difference between the alteration that a sentient being suffers and that an insentient being suffers is a numerical difference, namely a difference in the degree of affection. First of all, in this thesis, we have made it clear sufficiently that *De Anima* II.5 is a chapter centrally about an old question which Aristotle inherits from the early Greek natural philosophers: whether the sense-perceiver and the sensible object need to be similar or contrary to each other in order for a sense perception of the latter to occur in the former. These natural philosophers, such as Empedocles and Anaxagoras, are in fact physiologists in the sense that they seek to bring forth physiological material explanations for apprehensive or cognitive activities that human beings exhibit. In replying to and attempting to position himself towards the old question of contrariety and similarity in *DA* II.5, Aristotle exhibits a continuity of the tradition that had originated in these earlier physiologists. Yet Myles Burnyeat, ascribing such an idea as spiritual alteration to him, erroneously presents Aristotle as doing his physical and philosophical studies in isolation as if he were not in a connection with his predecessors. Rather, just as these physiologists

have, Aristotle also has a motivation to explain cognitive activities or, more specifically, sense perception, through physical material changes in the subject's sense organs.

Second, we have shown that by making an imprecise and incomplete reading of the analogy that Aristotle establishes in *De Anima* II.5 between two cases of apprehension, namely between thinking and sense perception, Myles Burnyeat in his account concludes falsely that for Aristotle, a sense-perceiver in his sensory activities, i.e. in his second transitions, undergoes only spiritual alterations. Burnyeat fails to provide a convincing reading of the analogy because he pays no attention to the restriction to the analogy that Aristotle himself makes in the same section of *De Anima*. To repeat what we have shown in the present thesis, in Aristotle a sense-perceiver suffers his first transition in the period when he acquires his sense organs and thus sensory capacities while in the womb. After birth the only transition he undergoes is his second transition, viz. ordinary or real alterations during his episodic or short-lived activities of sense perception. Further, when it comes to the same subject's acquisition of a certain piece of knowledge, in Aristotle's opinion, as clarified sufficiently before, there is no second way for the subject to obtain the universal ideas about particulars, except by means of sense perception. He acquires and then possesses the universals only through sense perception. The subject does not perform or suffer a separate cognitive activity for acquiring the universals and another activity for getting informed of the particulars in his environment. He performs sense perceptual activities for his apprehension of the particulars, and through time he induces the universals or the general ideas from these individual and numerous sense perceptions—more precisely, from their traces retained in his common sensorium. There is no further suggestion in Aristotle to conclude that the

subject arrives at the universals through some other way. Yet Burnyeat's reading suggests mistakenly that sense perception and thinking are two separate processes. When Aristotle says that the knower in his first transition suffers a series of qualitative changes, he means only and nothing else than that this process of first transition of the knower is in fact the sense perceiver's second transition, which is a sense perceptual activity. They overlap with each other. Besides, when Aristotle states that an actual sense perception is analogous to the exercise of a piece of knowledge, he just means to point out that a subject, at a moment of a sense perceptual activity and of a thinking or knowing activity, is similar to his object of apprehension, viz. a sensible object and a universal idea, respectively. Aristotle does not mean to contend by the analogy that both processes of second actualizations of the potential are analogous, as Burnyeat argues. By reading the analogy in this way, Burnyeat in his account mistakenly makes a sentient subject capable of carrying out a sensory activity without needing to have a sensible object operating on or altering his relevant sense organ, as the subject can carry out a thinking or knowing activity on his own whenever he wishes to. We have made it clear that a subject's sense perceptual activity totally depends on the assimilative activities of particular and external sensible objects over the subject's sense organ.

Third, we have seen that Burnyeat makes another mistake when he makes use of the phrase, made in *DA* II.12, 'reception of the forms of the sense objects without their matter' as a further support to his spiritualist interpretation of Aristotle's account of sense perception. Since Burnyeat in his reading takes the phrase in isolation, he misses the fact that this phrase can only be understood in conjunction with Aristotle's mean thesis, which finds its exposition primarily in the section that precedes II.12 of *De Anima*. What Aristotle means to say with the

phrase, as clarified previously, is that as far as sense perception is concerned, assimilative alterations occurring in a relevant sense organ must be within a certain range. This is so because each sense organ does originally have a mean quality, which is a perfect ratio of two opposing relevant qualities. If a sensible object brings forth a qualitative change in the relevant sense organ within a certain limit, a subject can have a sense perception of the alteration. This is what the phrase ‘reception of the forms of the sense objects without their matter’ means to express. If the sense organ receives the form or quality of a sensible object within a certain range, the subject can have sense perception of the form. However, if the alteration goes beyond the limit that the organ is naturally adapted to, viz. to a point that the organ cannot achieve going back to its naturally-possessed mean position, there won’t be a sense perception of the alteration but either a temporal inactivity of the organ’s sensory capacity or a permanent destruction of the organ itself. And this is what the phrase ‘reception of form with matter’ means to express. It expresses the idea that when a material being is confronted with an extremely excessive quality, there is no distinction between a sense organ and an insentient being, they both suffer an excessive alteration—they both can exhibit a change not only in their respective form or quality but also in their material constitution. Therefore, unlike what Burnyeat argues, neither of the phrases of *DA* II.12 introduces the presence of two sorts of alteration, ordinary and spiritual, in Aristotle but only a difference between the degrees of the same and unique sort of alteration, namely ordinary alteration.

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doi:10.1353/hph.2008.0933

