ARISTOTELIAN RATIONALITY OF ANIMALS: *PHANTASIA* AS A COMMONALITY OF HUMAN AND ANIMAL COGNITIVE PROCESSES

by

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ABSTRACT

This dissertation investigates Aristotle's theory of *phantasia* as a cognitive ability, in terms of which mental content is available to the mind of rational beings. The focus is on Catherine Osborne's extension of *phantasia* to non-human animals in order to allow for and explain non-human animal behaviour in terms of a rational paradigm, which de-emphasises, and does not rely on, linguistic ability. This paradigm for understanding animal behaviour as rational supports, and is supported by, modern theories of cognitive ethology, and argues for the ability of animals to share in conceptual thought. The recognition of rationality in animals by means of this paradigm bears ethical consequences for the treatment of animals.

KEY TERMS

Aritotle, *De Anima*, *phantasia*, animal rationality, imagination, memory, sense-perception, intellect, desire, propositional thought.

DECLARATION

I declare that the dissertation

"ARISTOTELIAN RATIONALITY OF ANIMALS: *PHANTASIA* AS A COMMONALITY OF HUMAN AND ANIMAL COGNITIVE PROCESSES"

is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete reference.

_____ 28th February 2010

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"*We need another and a wiser and perhaps a more mystical concept of animals. Remote from universal nature, and living by complicated artifice, man in civilization surveys the creature through the glass of his knowledge and sees thereby a feather magnified and the whole image in distortion. We patronize them for their incompleteness, for their tragic fate of having taken form so far below ourselves. And therein we err, and greatly err. For the animal shall not be measured by man. In a world older and more complete than ours they move finished and complete, gifted with extensions of the senses we have lost or never attained, living by voices we shall never hear. They are not brethren, they are not underlings; they are other nations, caught with ourselves in the net of life and time, fellow prisoners of the splendour and travail of the earth*."

Henry Beston "The Outermost House"

CHAPTER ONE

INTRODUCTION

Aristotle's treatise on the soul, *De Anima*, contains an exposition on *phantasia*, a component of the rational process of cognition attributed to human beings, which Aristotle developed and refined from a Platonic kernel. He employed this aspect of cognition to explain the presentation of mental concepts to the mind and the resultant initiation of rational, deliberative action in human beings. Importantly, Aristotle involved *non-human* animals in his formulation, and drew certain conclusions about non-human animals and their share in *phantasia*. While this exercise may have been purely a philosophical investigation by Aristotle, his formulation of *phantasia* was continued by later classical philosophical schools, notably the Stoics and Epicureans, who drew their own conclusions about animal rationality and consciousness and, crucially, defined ethical standpoints apropos animals, based on these conclusions.

Whether as a modern reaction to concerns about the moral position of humans towards animals in society, or as a re-investigation into foundational concepts of the pre-requisites for consciousness and rationality, stimulated perhaps by the dawn of new possibilities in machine or computer intelligences, Aristotle's work on *phantasia* and its role in conceptual thinking has lately been re-examined and re-presented. This time, though, as a paradigmatic explanator and apology for animal rationality, in a number of recent studies, which have approached the question from a variety of perspectives. Cognitive ethology, the branch of animal behavioural studies concerned with providing paradigms of animal behaviour based on rationality, rather than on instinct or innate response mechanisms, has developed models for explaining animal behaviour in terms of conceptual thinking, appealing indirectly to Aristotle's *phantasia* as a model for understanding how such conceptual thinking takes place.

More directly and relevantly, classical scholars such as Richard Sorabji ('Myths about non-propositional thought') and Catherine Osborne (*Dumb Beasts and Dead Philosophers*) have re-examined and argued for Aristotle's formulation of *phantasia* to specifically include animals within its ambit, both by drawing upon his own works as well as by demonstrating that evidence assembled from fields such as cognitive ethology in regard to animals' use of concepts and propositional thinking, is explained by a *phantasia*-based paradigm of conceptual thinking. In addition, recent medical studies support the contention that human and animal minds work, on a physiological level, in a manner which can be explained by, and at the same time itself explains, *phantasia*.

The present work investigates whether the contentions mentioned above can be supported. It opens with an examination of pre-Aristotelian views and modes of thinking about animals, including the Platonic introduction of *phantasia* as groundwork for Aristotle. From this introductory point, the work presents an overview of Aristotle's thought on animal rationality, followed by a critical analysis of *phantasia* as explained by Aristotle. This analysis involves not only a discussion surrounding the various statements made by Aristotle about *phantasia*, as spread across the treatise *De Anima* as well as other works in his corpus, but also an evaluation of later and modern understandings of *phantasia*.

Particular emphasis is laid on a discussion of an appropriate English term to denote *phantasia*. I argue that previously used terminology based on 'images' and 'imagination' is insufficiently precise to denote the meaning of *phantasia* in the sense and function analyzed in this work, with the resultant conclusion that the term *phantasia* itself is the best to be used, provided that its meaning is understood. To this end, a definition of *phantasia* as an ability to form mental representations of concepts is suggested to refer to an ability – without yet making a judgment as to whether this is a human, or animal, or shared human and animal ability – in terms of which mental representations of concepts are made available to

and are presented to the mind, thereby allowing, stimulating, and explaining *rational* behaviour.

Following from this starting point of a refined paradigm of *phantasia*, I explore Osborne's arguments in regard to *phantasia* as a mental ability shared by humans and animals, in particular her premise that rationality should be determined with reference to utilization of such concepts, rather than to linguistic ability. In this regard, Osborne's arguments are supported by empirical data and theory from the field of cognitive ethology, in which similar arguments are proposed for non-reliance on linguistic ability, in favour of the underlying use of mental concepts, when searching for determinators of rationality.

Various theories emanating from cognitive ethology in support of this paradigm are critically evaluated. I reach the conclusion that there are valid and tenable concordances between the models proposing rational animal cognition and both Osborne's paradigm of *phantasia* and Aristotle's foundational model. In essence, the concordances are to be found in the generality of a model of propositional thought, which does not rely on or require linguistic ability to support a conclusion of rationality.

Finally, I argue that Aristotle's theory of *phantasia* and, critically, Osborne's presentation of it, support the conclusion that animals act as *rational*, even if non-linguistic, beings. To sustain this theory, explicable in terms of models of propositional or conceptual thought, I present findings which affirm the *physiological* basis of *phantasia* and the location of *phantasmata* in both human and animal cerebral anatomy.

In this work, I reach the conclusion that Aristotle's paradigm of *phantasia* provides a valid mechanism to support a model of animal rational propositional thought, as tendered by Osborne, and that, on the basis of this paradigm, relevant conclusions in regard to historical approaches to the ethical treatment of animals as non-rational entities, must be re-evaluated.

CHAPTER TWO

FROM HOMER TO ARISTOTLE: APPROACHES TOWARDS NON-HUMAN ANIMALS

The earliest writings in Greek literature contain evidence for an inclination towards a sympathetic relationship between humans and animals, and this attitude is traceable at various stages through Greek history as a recurring theme, which finds diverse religious, metaphysical and philosophical justifications.

Jones argues for a prevalent attitude in early Greek society towards animals that allows a form of human kinship with animals, founded on the protection afforded to animals by the gods.[1] He adduces as an example the sentiments of Aeschylus in the *Agamemnon,* where it is said of Artemis that she is "so gracious to the tender whelps of fierce lions, and take[s] delight in the suckling young of every wild creature that roams the field."[2] Jones adds Sophocles,[3] Herodotus,[4] Aelian[5] and Euripides[6] in support of such a favourable outlook. This, Jones argues, is proof of a currency in Greek (and, later, Roman thought) that animals were considered to be entitled to ethical treatment by man. Obbink points out that Empedocles

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[1] Jones (1908: 209).

[2] Aeschylus, *Agamemnon*, at 140.

[3] Sophocles, *Electra*, 566-569.

[4] Herodotus, I, 159. In regard to the removal of bird's nests by Aristodicus at the oracle of Branchidae, where Aristodicus was censured by the god who said "*Will you rob my temple of those that take refuge with me?",* implying a right on the part of the birds to share in a human right to take refuge with the gods.

[5] Aelian, *On Animals*, xi, 31, 35.

[6] Euripides, *Ion*, 179.

held the view that a fellowship between mankind and irrational animals existed, which made it unjust to slay or sacrifice them.[7]

Admittedly, the extract from the *Agamemnon* cited above does not bear this outcome as a primary conclusion, but the sentiment can be derived by deduction, on the argument that, since animals were thought to be under the protection of the gods, killing them and eating their flesh might provoke divine displeasure, and that man, therefore, indirectly owed them ethical treatment. This, however, is due not to any inherent right of the animal itself, or any intrinsic quality or capacity of the animal which entitles it to such treatment, but rather to the fact that humans would do better than to provoke the anger of the gods by harming their favourites.

Nevertheless, in the apologetics for animals' right to ethical treatment, Jones finds a general justification for the popularity of movements such as Orphism, which advocated abstinence from the eating of meat. The Pythagoreans also advocated vegetarianism, although in the case of both of these movements, it is not possible to make as assertive a link between these facets of the lifestyles of their followers and the societal paradigm of favour being shown by the gods to animals. As Jones himself mentions,[8] such vegetarian practices were often justified by a variety of motives, including pure asceticism and the pursuit of good health. Accordingly, any attempt to re-construct an apology based solely on a philosophical apprehension of god-animal patronage, must of necessity be lacking, due to its failure to account for other complementary and contemporary motivating factors.

On a more metaphysical level, Jones observes that there is - unexpectedly - a marked correlation between belief in the transmigration of the soul and observance of abstinence from killing animals, justified by the conviction

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[7] Obbink (1988: 432).

[8] Jones (1908: 209).

that all life is sacred and that since any human or animal being will contain a soul, each is as worthy of protection as the other.[9] An example of this correlation is to be found in Empedocles, who held that to kill any living entity is unjust.[10] Xenocrates appears to have held the same beliefs. According to Porphyry, Xenocrates stated that the three laws of Triptolemus were to honour parents, to sacrifice fruits to the gods, and not to hurt animals.

In Xenocrates' case at least, the argument is made from a mythopoeic stance, which does not provide an appropriate level of scrutiny for the analysis of the rationality of such beliefs. In other words, the belief that it is proper not to hurt animals is held because these words are put in the mouth of Triptolemus; but there is no explanation as to why Triptolemus would have made such statement. Therefore, the justification for the practice is based on no stronger foundation than that the myth exists, and allows no departure from the conclusion, unless the myth or Triptolemus' statement are themselves rejected.

Again mythopoeically, there is a Hesiodic antecedent which claims that the gods gave Justice (*Dike*) to man, and not to animals. Hesiod (*Erga* 277) says to his brother Perses that fish, wild beasts and winged birds devour one another since there is no Justice in them, but that Zeus gave mankind Justice, and that this natural order is for the best. The gift of Justice, Lonsdale argues, prevents men from preying on each other, creating a fundamental ethical distinction between man and animal. This however, is

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[9] Jones (1908: 209).

[10] Jones (1908: 209). Campbell (2008), quotes Empedocles' argument against sacrificing and eating animals with the following cautionary tale: "*The father will lift up his dear son in a changed form, and, great fool, as he prays he will slay him, and those who take part in the sacrifice bring the victim as he pleads. But the father, deaf to his cries, slays him in his house and prepares an evil feast. In the same way son seizes father, and children their mother, and having bereaved them of life devour the flesh of those they love.*" B137. For Empedocles sacrifice is murder and meat-eating is cannibalism.

not to be taken to mean that man does not owe *Dike* to animals, but merely that *Dike* does not exist between the animals themselves.

As shown later in Herodotus (*Histories* 3: 99–108)[11], Nature's providence has afforded animals different protections to ensure survival against other animal predators. Man, if not included in the group of predators against which animals have been afforded protection, would then be the tipping point which may lead to the extinction of species. Thus, mankind has been given *Dike* to serve as a mechanism regulating not only man's relations with man, but also with all other animals.

However, it is clear from the above that there *is* a difference between man and animals - man must treat animals with *Dike*, but there is a *qualitative* difference between man and animal, in that animals do not have *Dike* themselves to order their own internal relations. Man is therefore superior at an ethical level. Osborne's analysis of Herodotus' remarks on the providence of Nature argues towards the concept that all species, by implication including mankind, are regulated and protected by the providence of Nature, which ensures that no one species can reproduce so rapidly that others become extinct.[12]

Within this paradigm, mankind is afforded no special protection: if it were, lions and all other animals which could pose a threat to man would be selected for extinction or reduction, in order to increase man's safety and well-being. But this is not the case; instead Nature balances all species in their interaction with each other. So man may be said to be equal to animals, at least in the eyes of Nature.

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[11] Osborne (2007: 27-28).

[12] Osborne (2007: 29).

Later, the status of man in relation to animals is questioned by Protagoras. It is argued that due to the lack of skills and attributes available to man, once Epimetheus has apportioned these amongst the animals, man is placed in an inferior position to animals, until he is given the gifts of fire – stolen from the gods by Prometheus – and of Justice, given by Zeus so that mankind may order its relations and not suffer reciprocal preying, as happens amongst animals. Apart from being a justification of the observable differences between human and animal, the argument places humanity in an inferior light, which rationalises human behaviour in respect of its conduct towards animals. As Miles summarizes Osborne's analysis of these passages,"Osborne's reading of Protagoras' myth as a narrative designed to engineer a change towards a more aggressive moral stance is astute and well developed."[13] What is of critical importance, here, is that Protagoras is still arguing from myth. As I pointed out above, the only way to refute a myth is to deny it; it cannot be argued against, other than by a contrary myth.

Lonsdale detects a current of thought in archaic Greek society which betrays a popular understanding that animals are somehow kin to humans, and that to kill them is analogous to killing a human. In support of this contention, Lonsdale notes:

> *In ancient Greece the sacrifice of an ox was like killing a brother. According to the primitive legal system of archaic Athens, the various participants of the bouphonia, the murder of an ox with an axe, were tried and found innocent, while the axe was deemed the guilty agent.*[14]

Whether this is sufficient evidence of a cultural attitude of human-animal kinship is debatable. If there were a prohibition against killing animals on

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[13] Miles (2007).

[14] Lonsdale (1979: 153).

the basis of their kinship with humans, the very idea of animal sacrifice might appear to be in conflict with any such cultural apprehension.

Nevertheless, the holding of a trial to determine guilt or innocence of murder is indicative of a recognition of the right of the animal not to be murdered, which amounts to a potential equation of animal and human standing. At this stage, however, the grounding for such recognition would, in all likelihood, have been mythological and religious in its aetiology, such as the common origins and providential distribution of skills discussed by Herodotus, or the protection afforded to animals by the gods, who also created them.

The position is not as one-sided as the above examples would tend to suggest, and countering the perception that ancient society was *uniformly* ethical in its treatment of animals, Lonsdale points out the absence of animals in Greek creation myths and cosmogonical theories. Man, it would appear, is the primary focus of cosmogony: animals do not feature in the Greek creation story, in keeping with the Greek anthropocentric world view.[15]

Also, similarly to the Hesiodic explanation of the differences between man and animal and the perfection of man's capacities, I identify a further example which may suffice to point to the existence of perceived differences between man and animal, which is available even from early literature. Interestingly, the precise point of difference noted is that which forms the major part of the debate in this dissertation: linguistic ability.

In the *Odyssey*, Polyphemus laments the inability of his lead ram to communicate with him, to tell him the whereabouts of Odysseus. The speech offers evidence for an attitude which is emblematic of Homeric age

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[15] Lonsdale (1979: 156).

thinking about animals, inasmuch as there was a perceived qualitative difference between man and animal. This is expressed by Polyphemus, when he says to the ram carrying Odysseus out the cave "if only you could think like us and be given a voice."[16] Despite the symbiotic relationship between man and animal,[17] and the fact that man owes animals Justice, not only is there a clear statement to the effect that the ram cannot speak, but also the awareness that, if it could, it would need to be able to *think* like a human, in order to communicate with Polyphemus. This insight, as will be discussed later, forms the central point around which a *qualitative* difference between man and animal will be argued by the Stoics and Epicureans to deny animals a right to ethical treatment and to assign them the status of a commodity or resource to be used by man. Crucially, Osborne argues against linguistic ability as the determinator of difference between man and animal.

The debate from both sides holds, prior to Plato and Aristotle, largely mythopoeic connotations. Plato's approach arguably represents the beginning of the philosophical, rather than the continuation of the mythopoeic, treatment of the topic. Even so, Plato's views also show a duality of reasoning, which seems to incorporate both recognition of the similarity between man and animal, and a denial of rights to animals, perhaps born out of Plato's milieu of economic, societal and cultural norms prone to such denial of rights. Any Platonic statements in this regard must thus be understood as being influenced by contemporary societal and cultural contingencies.

Campbell argues that any stance against the practices of animal sacrifice and meat-eating would have been:

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[16] *Odyssey*, 9.447-57.

[17] Lonsdale (1979: 149). Lonsdale summarises Greek attitudes towards animals in Homeric and Hesiodic times as allowing one in which there is a reciprocal, co-operative relationship, particularly between man and domesticated animals.

> *a radical theological stance, given that animal sacrifice was considered fundamental to the practice of Greek religion, and also [would have had] serious political implications.*[18]

Plato's stance is arguably more conformist or apologist to societal and political expectations. This is confirmed by the fact that Plato, although allowing animals to have souls, expresses a viewpoint which is distinctly unfriendly to animals, in that he does not recognise that they are entitled to any special treatment by humans, and may be sacrificed or eaten or used as a commodity and resource. A stance seemingly at odds with his views on the transmigration of the soul.

However, Campbell notes, the two irreconcilable viewpoints find some conjunction when explained by a set of reasoning which, though formal and impersonal, is strictly logical. Plato reconciles these seemingly incompatible beliefs - in the transmigration of the soul and the non-sacrality of animal life - within the overriding vision that the divine intention for the perfection of the soul was gradual, accomplished by a variety of lives in different forms. As such, life could be sacrificed to accomplish the divine intention, whether such sacrifice was of a human or animal being.

According to this argument, the killing of an animal would not be considered as an injustice to the animal and might even be said to be a favour to the animal. For if the perfecting of the soul was gradual and incrementally achieved by each life-cycle, the death of the animal could be argued to hasten the beginning of the next, more perfect cycle. Whether Plato would have accepted the argument as framed by Cambell is debatable, particularly as it could be applied to *both* human and animal beings, if accepted *in principle*. Nevertheless, even Aristotle appears to have been aware of considerations of political convenience and societal

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[18] Campbell (2008: 6).

expectation: he remarks in *Politics* (3.9, 1280b37) that "communal sacrifices constitute a large part of what makes a *polis* different from just a group of people", and (*idem*, 6.8, 1322b26-31) that "public sacrifice is one of the offices essential to a city state."

Dealing not only with the *philosophers* of the ancient world, Jones argues that the debate about respect for animals and animal rights spread beyond the confines of philosophy, into the popular sphere. Proponents would have included the man on the street and the discussion over the position of animals in society and culture would not have remained a mere academic exercise or test of rhetorical skill, and not reserved solely for the Platos of the ancient world. Thus, Jones disagrees with Gomperz's assertion that "the temperament of the Greek people was never friendly to animals".[19] Jones makes a telling point about the development of thought in regard to animal rights, when he indicates that pre-philosophical thought expressed, as would be expected, man's kinship with animals in the language of the religious sphere, so that the gods and heaven were seen as the protectors of animals, and that later philosophical thinkers attempted to define and rationalise this inheritance in the language of philosophy.[20]

In this chronological review of the development of thought, it becomes apparent that the earlier, sacral place of animals, as justified by religious thought, allows for little scope to argue against the standing of animal beings, and it is only when the debate is articulated in philosophical terms, detached from the constraints of the religious paradigm, that divisions in thinking become apparent and the view that animals are essentially different from humans, and therefore are entitled to fewer or no rights, is capable of being argued.

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[19] Jones (1908: 209), quoting Gomperz, T. *Gk Th.* i.126.

[20] Jones (1908: 210).

Although Gilhus contends that there was an appreciation of a common unifying factor shared by humans and animals, which was variously recognised across time periods and justified in diverse manners, as set out above,[21] he holds it as equally true that examples exist of paradigms in which animals were conceived of as being *qualitatively* different from man. Certainly, these paradigms existed side by side with the type of complementary (or conflicting) paradigms argued for by Gilhus, in which kinship and commonality were emphasised.

It is from this legacy of apology for an ethical paradigm of animal and human interaction, that Aristotle took up the debate. It is traditionally thought that the Stoics and Epicureans relied on Aristotle's arguments in support of *reason* as being uniquely possessed by man, to justify the denial of animal parity with humans, which had the – perhaps unintended – consequence to displace the animal in the ethical hierarchy of rights.

This development of thought takes root in the supposed Aristotelian premise of the lack of rationality in animals. However, the assertion that the Stoic and Epicurean schools relied on Aristotle's negative stance on animal rationality to deny animals the right to ethical treatment, in particular, and the denial of rights in general, forms, in fact, only the end-point of the debate, rather than its beginning.

At this point, three questions ought to be raised: First, did the Stoics and Epicureans rely on what Aristotle said in regard to animals to justify their stance on animals? Secondly, did Aristotle say anything in regard to animals which unambiguously asserted that they have no rationality? Thirdly, may animals be said to act rationally, in terms of Aristotelian models of rational behaviour as described in humans – in other words, in

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[21] Gilhus (2006: 38).

terms of the mechanism of *phantasia*? The first question is not the concern of this dissertation, and will thus be addressed only indirectly.[22] The answers to the second and third questions provide the structural framework of this work.

Even if the Stoics and Epicureans did rely on Aristotle, that is not say that such reliance was based on a correct interpretation.[23] Stoic and Epicurean dogma on animals may be based, therefore, on an ill-gauged or incomplete understanding of Aristotle's stance. Also, any such Stoic or Epicurean moral attitude is demonstrably capable of separation from any moral stance which Aristotle may have adopted towards animals. Newmyer cites Sorabji: "Aristotle, I believe, was driven almost entirely by scientific interest in reaching his decision that animals lack reason,"[24] to support his conviction that later Stoics imparted their own moral conclusions and

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[22] This question is not the focus of this dissertation, although it is clear that any conclusions reached herein which support the contention that Aristotle is not as unequivocal in his approach as has been assumed, would invite comment on this topic and a review of the reasonableness of Stoic and Epicurean reliance on Aristotle to justify their position on animal rights.

[23] The first question: According to Obbink (1988: 428-435), the Epicurean Hermarchus argued in turn that no animal which lacks reason has any share in justice (Porph. *De Abst*. 1.12), Obbink (1998: 432, n 21). Campbell (2008) also argues that Epicurus' contractarian viewpoint was based on the premise that animals lacked capacity to contract, and therefore justice and moral treatment is only owed to those who can contract; "Nothing is just or unjust in relation to those creatures which were unable to make contracts over not harming one another and not being harmed"; (Epicurus KD 32 and 33.) Hermarchus later explained the lack of reason as the explanation for why animals cannot contract, *De Abst*.1.12 above; "*If, then, it were possible to make a kind of contract with the other animals over their not killing us or being killed by us indiscriminately, it would have been good to push justice up to this point; for it would have extended our security. But since it was not possible to associate creatures that lack reason with law, it was not possible to use such an instrument as the means of providing for utility in our security from other living beings any more than from lifeless things."*

[24] Sorabji (1993: 2), cited in Newmyer (2005: p6).

judgements onto Aristotle's scientific zoology.[25] Thus, it is clearly to the Aristotelian corpus that reference must be made to determine whether Stoic and Epicurean reliance on Aristotle's supposed denial of reason to animals is justified.

The importance of going back to Aristotle to answer this question is evident from Sorabji's observation that:

> *a single decision in Aristotle, the denial to animals of reason and belief, lead in Aristotle and the Stoics, to a massive re-analysis of psychological capabilities*.[26]

What then does Aristotle say about animal rationality, and how does his discussion of the ability of *phantasia* influence his views, as to whether or not animals share this ability? In brief, Aristotle's approach is that animals are *ta aloga* – the irrational ones. If they act in a manner which appears rational, this is because they act according to nature – moved by an innate or instinctive cleverness, not rationality.[27] What supposedly emerges from the writings of Aristotle, and which is later expanded on by the Stoics, is that there exists a *categorical* difference between animals and humans.[28] This in opposition to earlier paradigms, which allowed for a difference in degree of ability, accepting that animals and humans can and do share rational faculties, even though these are more pronounced or more developed in humans.

Thus, in the Aristotelian, Stoic and Epicurean paradigm, man is essentially different from animals, and the discriminating factor lies in the latter's lack of reason and language. According to this paradigm, animals can be denied by man the right to ethical treatment, due to the fact that they do

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[25] Newmyer (2005: 6).

[26] Sorabji (1993); cited in Gilhus (2006: 38).

[27] Gilhus (2006: 39).

[28] Gilhus (2006: 39).

not possess the capacity for speech, or rationality. Gilhus shows that where there exists such a philosophical categorisation of man and animal as essentially different, this is based on the denial to animals of those fundamental characteristics that are said to define humanity.[29]

The boundaries thus conceived convey a greater sense of difference than the earlier mythological-religious prohibitions on certain modes of behaviour towards animals.[30] These are precisely the philosophical boundaries which are set in terms of the Stoic and Epicurean argument, an argument, as pointed out by Sorabji,[31] based on, or initiated by, Aristotle's supposed denial of rationality in animals.

What follows below is an investigation into Aristotle's views on animal rationality, framed in terms of *phantasia*. The major part of the discussion, directed at showing that the conclusions discussed above are based on only a *portion* of what Aristotle has to say in regard to animals, will be based upon a critical evaluation of the Aristotelian concept of *phantasia*. This may be defined as an ability, shared by man and animal, to conceive of concepts and objects. An ability which does not require speech – the immediate disqualifier of rationality in animals – as an indicator of some type of rational motivating behaviour in man and animal.

Thus, while the Stoics and Epicureans viewed language as a *sine qua non* for rational thought, and its absence to form the dividing line between man and animal, I argue that *phantasia* ought to be reconsidered as the real determinator of rationality. Since Aristotle generally recognises the operations of *phantasia* in both man and animal, I suggest that *phantasia*

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[29] Gilhus (2006: 39 – 40).

[30] Such as killing them in certain circumstances, and other (including sexual) relations with them.

[31] Sorabji (1993); cited in Gilhus (2006: 38).

can provide that continuity of rationality or *logos* which creates a philosophical kinship between man and animal, particularly when Osborne's paradigm of *phantasia* is presented. From this perspective, Aristotle's views in regard to animals may not be found to be as one-sided as Stoic and Epicurean recapitulation makes them appear.

CHAPTER THREE

PHANTASIA AND ARISTOTLE'S ANIMAL

Aristotle discusses animal characteristics at length,[1] and, certainly, some of the views he expresses are indicative of a tendency to emphasize difference, rather than common abilities, between human and animal beings. For example, in *Historia Animalium*, Aristotle notes that '*of all animals man alone is capable of deliberation. Many animals have memory, and are capable of instruction; but no other creature except man can recall the past at will*.[2] The difference between memory and an ability to recall the past is, perhaps, as much a question of the translation of this passage as what Aristotle meant in the original Greek. However, Aristotle is emphatic that 'recalling the past at will' is considered to be a uniquely human preserve. Even this position, however, is being questioned empirically by contemporary cognitive ethologists, as suggested by the studies of Clayton and Emery, which indicate that certain species of birds seem to be able to recall a past specific event, and seem to know not only

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[1] Aristotle's observations of and investigations into animal capabilities seem to be based on actual trial and investigation, which did not baulk at physically testing theories on animals, an indication that he does not appear to hold any moral scruples in this regard. He says "*If you prick out the eyes of swallow chicks while they are yet young, the birds will get well again and will see by and by*." Aristotle, *Historia Animalium*, 6.5; see also Aristotle *De Partibus Animalium*, 1.1.

[2] Aristotle, *Historia Animalium*, 1.1

where they stored food supplies, but also how long ago they did so, so that they are able to retrieve the hidden stock before it spoils.[3]

Walker concurs. The behavioural evidence he cites indicates that animals' ability to recognise visual patterns and retrieve information regarding the location of food stores reveals "a certain degree of mental organisation."[4] However, other differences between human and animal are also apparent in Aristotle: language is an important factor, and again one which provides a dividing line between human and non-human beings, in that it is identified as a faculty which only mankind possesses. Aristotle observes that:

> *viviparous quadrupeds utter vocal sounds of different kinds, but they have no power of converse. In fact, this power, or language, is peculiar to man. For while the capability of talking implies the capability of uttering vocal sounds, the converse does not hold good.*[5]

As will be seen below, the discussion in regard to the ability to express oneself linguistically has been central to the argument around the denial of rationality to animals. A long-held tradition - traceable from Aristotle, through to the Stoics and Epicureans to Descartes, and continuing - maintains that lack of language and linguistic ability are concomitant with a lack of rationality. In this regard, it must be noted that Aristotle does not,

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[3] Although this behaviour is interesting, and is perhaps indicative of the existence of a *phantasma* of the food store in the mental landscape of the bird, the proof, or otherwise, of animal memory, does not lie within the ambit of this dissertation. The existence of a *phantasma* with accreted information content and the presentation of such *phantasma* to the mind of the subject, when the sensible object which is the subject matter of the *phantasma* is not present, is arguably the operation of memory. Emery and Clayton (2001: 443–446).

[4] Walker (1983: 382).

[5] Aristotle, *Historia Animalium*, 4.9.

in the above passage, either explicitly or implicitly, draw a connection between animals' lack of language and lack of reason. Thus, the linking of a deficiency in language and a deficiency in reason is demonstrably not an Aristotelian paradigm.

Returning to the question of Aristotle's general treatment of the man-animal nexus, the philosopher also admits the existence of similarities between man and animal. He observes:

> *For just as we pointed out resemblances in the physical organs, so in a number of animals we observe gentleness or fierceness, mildness or cross temper, courage, or timidity, fear or confidence, high spirit or low cunning, and, with regard to intelligence, something equivalent to sagacity.*[6]

But even so, Aristotle argues for a spectrum of capabilities among animals and holds that not all animals are created equal:

> *Some animals, like plants, simply procreate their own species at definite seasons; other animals busy themselves also in procuring food for their young, and after they are reared quit them and have no further dealings with them; other animals are more intelligent and endowed with memory, and they live with their offspring for a longer period and on a more social footing*.[7]

When discussing the differences in temperament between male and female animals, Aristotle notes that there exists a general difference, which is replicated in human beings. However, his description illustrates a further general principle, namely, that certain characteristics found in animals are *perfected* in man:

> *The traces of these differentiated characteristics are more or less visible everywhere, but they are especially visible where character is*

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[6] Aristotle, *Historia Animalium*, 8.1.

[7] Aristotle, *Historia Animalium*, 8.1.

> *the more developed, and most of all in man. The fact is, the nature of man is the most rounded off and complete, and consequently in man the qualities or capacities above referred to are found in their perfection.*[8]

From the aforegoing, it appears that Aristotle identifies both differences and commonalities between man and animal. Yet, it is potentially where reason and intellect are concerned that an apologist for either an animal-friendly or the contrary viewpoint, may seek to identify unity or differentiation, in order to justify a particular moral stance. The characteristics of animals enumerated by Aristotle relate to superficial similarities, such as physiological commonalities or shared virtues such as courage,[9] which, in themselves do not significantly advance the debate regarding animal rationality, or its lack , with much weight of argument.

However, in addition to the physiological and personality differences and similarities noted above, Aristotle also discusses an ability possessed by human animals, which he calls *phantasia*. Later commentators who wish to extend Aristotelian comments on and paradigms of *phantasia* have argued that this ability is a shared characteristic of man and animal, which allows for a fundamental unity between the two species on a critical level, and which would bring into question the ethical consequences of a viewpoint that denies such a fundamental unity, on any grounds. What is *phantasia*? How does Aristotle describe it? Most importantly, does Aristotle assign the capacity for *phantasia* to animals, and if so, is *phantasia* an ability which would allow recognition of rationality and a human-analogous cognitive ability in animals?

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[8] Aristotle, *Historia Animalium*, 8.1.

[9] Arguably the categorization of these types of animal behaviour in terms of human virtues is an exercise in anthropomorphism carried out on the assumption that animal actions, if similar to human actions, are motivated by a similar precipitating emotional state.

CHAPTER FOUR

ARISTOTELIAN *PHANTASIA* - PROBLEMS OF DEFINITION

As a point of departure, it must be noted that *phantasia* is neither exclusively, nor originally an Aristotelian concept. The first mention of *phantasia* as an ability, in the context of perception and behaviour, is made by Plato in the *Sophist:*

> *And when [assertion and denial] is present to the soul, not independently but through sensation, can this state of soul be called anything but phantasia?*[1]

Plato himself was not the first to use the term, and its use is not a Platonic neologism. Notomi recognises that "the concept of *phantasia* which has developed into our concept of imagination, was first introduced in Plato's dialogues", but that "there are examples of this word extant in Greek literature before Plato." Even so, *phantasia* seems to be fully explored as a psychological or cognitive ability for the first time in Plato. Notomi summarises its Platonic usage: "Plato used this word seven times in his works; apart from one example in the *Republic* and two in the *Theatetus*, all the other four appear in the *Sophist*."[2] As to its function, for Plato *phantasia* is "some kind of combination of belief and sensation."[3]

As Watson points out that Aristotle would have been familiar with Plato's position as set out in the *Sophist,*[4] and Rees points out that, although Plato dealt with the concept of *phantasia*, Aristotle's treatment "goes markedly beyond" anything found in Plato.[5] He further argues that Aristotle's

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[1] Plato, *Sophist*, 264a 4-7.

[2] Notomi (1999: 250).

[3] Silverman (1991: 124).

[4] Watson (1982: 100).

[5] Rees (1971: 491).

paradigm of *phantasia* also represents a *reaction* to the Platonic conceptualisation of *phantasia*, and that in order to understand Aristotle's position, it is necessary to examine the strength of, and the reason for, such a reaction. I undertake this examination in greater detail later: accordingly, although I refer to the Platonic conception of *phantasia* at various points below, this is done in order to more precisely define Aristotelian *phantasia* and to attempt to discern whether Aristotelian *phantasia* may be a possible explanator of levels of rationality in animals. Although it is important to note that Aristotle was not the first to discern or discuss this particular ability, the role he allowed it renders his conception of it critical to the argument that *phantasia* rather than language*,* may be relied on as the determinator of rationality.

There are, perhaps, as many definitions and interpretations of Aristotelian *phantasia* as there are scholars who have commented on the subject. As a result, the level of uncertainty about what Aristotle means when he speaks of *phantasia*[6] and its associated terms *phantasma*[7] and *phantasmata*[8] is high. This is exacerbated by the fact that Aristotle's own treatment of the subject is – superficially at least - lacking in the precision which some wish to find. Schofield suggests that "some of the inconsistencies of Aristotle's account seem more than merely apparent".

Even though Watson argues that Schofield is "more generous about saving the unity of Aristotle's concept" than other scholars,[9] he himself has no hesitation to state that he thinks of Aristotle's *phantasia* as a 'loose-knit,

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[6] The noun referring to the ability of the mind to have mental images, rather than the mental images (*phantasma/phantasmata*) themselves which are the underlying subject matter of the ability.

[7] The singular noun form of the mental image.

[8] The plural noun form for the mental images.

[9] Watson (1982: 100).

family concept".[10] Hamlyn is also critical, observing that *phantasia*, and Aristotle's description of it, holds an unsatisfactory, half-way status between perception and intellect in the philosophical scheme, and that its exact position is never made clear.[11] Some scholars claim that this lack of consistency in usage and the resultant opacity of definition (and translation) are due to a sustained development of the concept of *phantasia* in Aristotle's various treatises, such that the treatment of *phantasia* in the early works is not necessarily the same as the one found in later works.

While this is a plausible explanation for the differentiation of usage across various treatises, perhaps a more fruitful one may be that *phantasia*, for Aristotle, was a complex cognitive ability, which functioned on various levels, and was involved in (or contributed to various degrees to) larger cognitive processes, and effected or explained a number of different actions in both human and animal beings. If this is correct, it would be naturally expected that Aristotle's treatment and explanation of *phantasia* may differ according to the circumstances in which its function is explained or described. Byrnum argues for exactly such a position, when he asserts that there is no canonical theory of *phantasia* held by Aristotle, who "describes *phantasia* as playing several roles."[12]

The English term commonly employed to translate *phantasia* is 'imagination'. Whether or not this term is sufficient to denote the full import of its Aristotelian usage, is a fundamental concern. As Frede states

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[10] Schofield (1978: 103). Also cited in Watson (1982: 100).

[11] Hamlyn, DW, "Aristotle's *De Anima*" Oxford University Press, Oxford, 1968, p *xiv*; cited in Watson (1982: 104).

[12] Byrnum (1993: 100). *Phantasia* is also mentioned in *De Memoria* and *De Insomniis*; Sorabji says that in these instances Aristotle is still discussing a mental image. Sorabji (1993: 174; 192, n33).

"the difficulties with the concept of phnatasia start with the translation."[13] Arguably, the translation of *phantasia* as 'imagination' in Aristotle's text *De Anima*, does a disservice to Aristotle's paradigmatic explanation of *phantasia* as an *ability*. The use of the term 'imagination' glosses over some of the more important nuances present in Aristotle's work; this nomenclature is, thus too limited a term to embrace the full meaning of what is proposed by Aristotle, *phantasia* being no less than the indicator of mental and cognitive ability processes.

Byrnum is critical of the term 'imagination' as translation for *phantasia*, and argues that most commentators have fastened upon those passages in Aristotle which properly deal with images, and have mistakenly extended the terminology to apply to other passages, where Aristotle uses the term with different intent. Byrnum, therefore, argues correctly that there can be found no canonical usage of the term in Aristotle, since it plays conceptually different roles in different contexts.[14] Accordingly, the full import of what Aristotle conceived of as *phantasia* is overlooked, when we dismiss it as mere 'imagination', or *phantasmata* as 'images'.

The corollary of this argument is that a more comprehensive and meaningful understanding of *phantasia,* as Aristotle viewed it, will give a better understanding of how it fits into Aristotle's broader explanation of rational cognitive ability. This would, in turn, open the door to recognising and allowing this ability - a rational, cognitive ability - to animals. The caveat proposed herein is that, wherever a translation or commentator refers to *phantasia* as 'imagination', this narrow usage be considered with caution for the reasons set out above, and that, until the term *phantasia* is better understood, no attempt will be made to translate it by a correlative modern English noun. Instead, an attempt will be made to ascertain what

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[13] Frede (1995: 279).

[14] Byrnum (1993: 100).

Aristotle proposed when he spoke of *phantasia*, without trying to constrict the term within the limitations of an imprecise, inaccurate translation.

Since the primary question is whether Aristotle allowed animals a share in *phantasia*, it is important to note that in *De Anima*, his seminal work on the nature of living things and an investigation into processes by which living things act and react, Aristotle's first pronouncement on *phantasia* is that it is an ability of 'beings', not just *human* beings. Compare Smith's translation, from *De Anima* 3.3:

> *Imagination [phantasia] is held to be a movement and to be impossible without sensation, i.e. to occur in beings that are percipient.*[15]

We find the same statement in Durrant's translation:

> *And imagination is thought to be a kind of movement and not to arise apart from sense perception, but only in percipient beings and with the objects of its perception for its objects.*[16]

We note at once that this formulation places Aristotelian *phantasia* at variance with the concept of *phantasia* envisaged by Plato, who denied it to animals.[17] At the same time, it introduces the possibility of arguing that non-human animals, as Aristotelian 'beings', along with human animals as Aristotelian 'beings', can share in *phantasia*. Yet, the reference to the word 'beings' in this paragraph is not uncontroversial, even though, arguably, the controversy is unnecessary, or, at least, more easily disposed of than other issues.

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[15] Aristotle, *De Anima*, 3.3 trans J.A Smith; http://classics.mit.edu//Aristotle/soul.html.

[16] Durrant (1993: 57); *De Anima* 3.3 428b11-14.

[17] Watson (1982: 108).

Watson suggests that the reference to 'beings' is a source of possible discrepancy in Aristotelian thought on *phantasia*.[18] However, his objection to the word 'being' does not relate to incorrect translation, or to the possibility that it may be a later insertion, which would not or should not be found in Aristotle's original, or to the fact that this word should not be found in the paragraph for some other reason. Instead, Watson's objection is that Aristotle, unlike Plato, does not restrict *phantasia* to human beings.[19] Instead, in the Aristotelian text, *phantasia* is understood to be available to *all* 'beings', and this specific availability clarifies to Aristotle why 'beings' act according to a purpose. Yet, Watson argues, both we and Aristotle know that it is difficult to distinguish the lower reaches of non-rational animal life from vegetable life.

Why or how this would bolster an objection to the comprehensiveness of the term 'beings' is unclear; Aristotle himself acknowledges, as Watson perceives, that this is the case:

> *'Besides the identity of the two [imagination and perception] in activity would involve the possibility that all beasts have imagination. But this is apparently not the case; for example the ant, the bee do, but the grub does not possess it.'*[20]

Later he adds, "*Among beasts however, though some have imagination, none have reason."*[21] As indicated above, the 'controversy' around Aristotle's use of the word 'beings' is, perhaps, less serious than appears to be the case, at least in regard to the question whether Aristotle recognised that animals possess *phantasia*.

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[18] Watson (1982: 100).

[19] Watson (1982: 100-101).

[20] Durrant (1993); *De Anima* 3.3 427b40-43.

[21] Durrant (1993); *De anima* 3.3 428a23-25.

I suggest that the indisputable deduction to be drawn from this passage in *De Anima* is that Aristotle allows *phantasia* to animals, by the explicit use of the term 'beings' to describe the class of entities which are said to possess it. Had Aristotle wanted to deny *phantasia* to animals, this would have been the place to do so, and he would have explicitly done so, by using a term/or phrase which would unambiguously exclude them. In support of my contention, Aristotle refers again in *Metaphysics* to animal *phantasia*, where he states:

> *'The other animals live by their* phantasiai *and memories.'*[22]

However, the theoretical availability of *phantasia* to all 'beings' endowed with perception has led to a further debate as to *which* beings, in particular animals, obtain the ability *phantasia* through their ability to perceive. In my view this argument is circular in that, in order to identify those beings which have *phantasia,* it will be necessary to determine which of them has perception, in the course of a similarly in-depth analysis of the Aristotelian understanding of this very ability. But what is to be achieved here is not a categorisation of a *genus* or *numerus clausus* of beings which do or do not possess *phantasia*, but, rather, an understanding of the function that *phantasia* performs as an *ability* in those beings that possess it. So Watson is correct insofar as he argues that it may be difficult to determine where the line is drawn in regard to which beings obtain *phantasia* through perception, but only because the determinant for perception is not explicit in Aristotle.

Aristotle himself does not state that all 'beings' have *phantasia* without qualification. Watson objects that it may be difficult to draw a line between the lower reaches of non-rational animal life and vegetable life, and Aristotle himself admits that the answer to this question is obscure.[23]

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[22] Aristotle, *Metaphysics,* 980b 25 ff.

[23] Aristotle, *De Anima* 2.3. 414b16.

Aristotle then cannot decide which beings possess or do not possess perception, and therefore cannot conclude whether they are endowed with *phantasia*. Obscurity in regard to where exactly the line is drawn notwithstanding, it remains clear that Aristotle did *not* think that all animals possess *phantasia*. He claimed that the bee and the ant have *phantasia*, but the grub does not (see quotation above); unfortunately, he does not explain *why* he discriminates in this manner, and he does not provide any pointers as to how his classification system may have worked.[24]

It is conceivable, as unsatisfactory as it may be, that this would be determinable by Aristotle on a case-by-case basis, rather than in terms of a general standard or rule. At the very least, the higher orders of animal life are undeniably recognised to possess the ability. Taylor and Franklin[25] suggest (in much the same way as Aristotle) that there must be a continuum of animal consciousness, definitely attributable to animals such as dolphins and apes – based on their ability to recognise themselves in a mirror[26] - but not attributable to other animals, such as dogs, and what Taylor refers to as 'lower evolved animals'.

This scale of animal consciousness is referred to as the dilution or 'thinning' of animal consciousness, from more highly evolved or conscious animals, to lesser conscious animals.[27] Of course, the problem with this gradation scale is that it presents the same difficulties as Aristotle's limitation of

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[24] Interestingly, Darwin stated he believed that earthworms are cognitive beings, since, based on his observations, "*they have to make judgements about the kinds of leafy matter they use to block their tunnels.*" Charles Darwin, quoted in Morell (2008: 48).

[25] Franklin (1995: 45).

[26] Referred to as the mirror test; see Taylor (2006: 257).

[27] Taylor (2006: 257). Franklin refers simply to a belief that there will be a great difference between animal possession of 'mind' depending on species. Franklin (1995: 45).

imagination to certain animals: neither is there a list of animals provided by either Taylor or Aristotle, which indicates the category into which they fall, nor is it established what the criteria are for effecting the determination. Even cognitive ethologists cannot decide *where* the line should be drawn. Dennet states that "people, (and at least some other animals) have minds after all: they are rational agents*."*[28] He also quotes Nagel who, he says, "could not draw the line as we descend the scale of consciousness."[29] Walker also admits to some difficulty in drawing the line: he is prepared to allow cognitive states to mammalian vertebrates, but questions whether other orders and classes should be allowed to share in such states. His reluctance to extend cognitive states to non-mammalians appears to be grounded in a physiological approach, in which equivalent cerebral anatomy and brain activity in mammalian non-humans and humans tends to support that these can have equivalent cognitive states.[30]

Despite a declared difficulty in ascertaining precisely which animals do and which animals do not possess *phantasia*, it is indeed determinable that animals in general, or at least some orders of animals, are recognised by Aristotle to possess *phantasia.* The more important question remains: *which* actions does *phantasia* enable the possessor to perform? What cognitive abilities involve or require *phantasia*, or are made available to those beings that posses *phantasia*? Succinctly, and resisting the well-worn tradition of translating *phantasia* as 'imagination', we return to our starting point: what is *phantasia*?

In considering *phantasia* as it relates to cognitive ability and rationality, we ought to look carefully at Aristotle's own definition, which is perhaps most

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[28] Dennet (1998: 323).

[29] Dennet (1998: 343–344). Dennet calls this, rather tongue in cheek, the "scale of cuddliness."

[30] Walker (1983: 384-386).

comprehensively[31] found in *De Anima* (3.3 (428b10-17), where Aristotle defines *phantasia* as

> *'a movement which comes about in beings that perceive of things of which there is perception and because of an actual perception. It is similar to the perception, and beings which possess it often act or are affected in accordance with it.'*[32]

Also in *De Anima* (3.3 428a1):

> *'Phantasia is that in virtue of which we say that a phantasma occurs to us.'*[33]

Despite the objections referred to above, a translation of the term *phantasia* is traditionally effected through the word 'imagination'. Demonstrably, this does a severe injustice to any treatment of what Aristotle meant when he used the term in the context of *De Anima.* In order to demonstrate the incompleteness of the term 'imagination' in the context of Aristotle's text, an analysis of the ways in which it is revealed to be insufficient to fully expound what Aristotle proposed in his explanation of *phantasia,* is more fully undertaken below, in conjunction with a critical investigation of scholarly support as well as criticism of translations.

Imagination is defined in modern dictionaries, as follows:

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[31] There are numerous references to *phantasia* in Aristotle, but it is in *De Anima* that the above definition, which provides the most detail as to what Aristotle means, is to be found. Other references to *phantasia* seek to build onto this foundational definition and can be studied to analyze how and in what way *phantasia* operates, for further understanding of the generality of Aristotle's definition here.

[32] Aristotle *De Anima* 3.3, 428b10-17. Durrant's translation is similar: "*Phantasia* is that in virtue of which we say that a phantasm presents itself to us." Durrant (1993). *De Anima* 3.3 427b30-32.

[33] Noel (1997), quoting from *De Anima* 3.3, 428a1. by Lawson-Tancred (1986). Admittedly, this definition is not particularly helpful, as it refers to *phantasmata*, which must first be understood in the context of *phantasia*, and is therefore not very helpful in elucidating what is meant by *phantasia* in the first place.

Imagination -

> 1**:** the act or power of forming a mental image of something not present to the senses or never before wholly perceived in reality.
>
> 2 **a:** creative ability **b:** ability to confront and deal with a problem **c:** the thinking or active mind.
>
> 3 **a:** a creation of the mind; especially**:** an idealized or poetic creation **b:** fanciful or empty assumption.'[34]

An additional modern definition proposes the same connotations of the term in contemporary usage:

Imagination:

> 1 **a.** The formation of a mental image of something that is neither perceived as real nor present to the senses. **b.** The mental image so formed. **c.** The ability or tendency to form such images.
>
> 2. The ability to confront and deal with reality by using the creative power of the mind; resourcefulness: handled the problems with great imagination.
>
> 3. A traditional or widely held belief or opinion.
>
> 4. Archaic **a.** An unrealistic idea or notion; a fancy. **b.** A plan or scheme.[35]

However, to equate Aristotelian *phantasia* with the above or other similar modern connotations of imagination, would infer that Aristotle was alluding to imagination in the senses mentioned above, when he spoke of *phantasia*.

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[34] http://www.merriam-webster.com/dictionary/imagination.

[35] The American Heritage Dictionary of the English Language: Fourth Edition. 2000, entry for *imagination*; http://www.bartleby.com/61/26/I0042600.html.

Although Frede appears to support translating *phantasia* as 'imagination'[36], if the word 'imagination' is used to translate *phantasia*, the question applies more to what 'imagination' means in contemporary usage, rather than being about what *phantasia* meant to Aristotle. This, arguably, places emphasis on the wrong point and detracts from the real issue at hand. Also, when the modern usage of imagination is considered, it immediately becomes apparent that many of the usages of the modern term lack the technical precision and focus of what will be shown to be, generally, a highly complex cognitive ability.

An ability, I shall argue, which is itself composed of a number of layers of further abilities and which both deals with mental representations and collation of information into neural networks of human and animal minds. If this understanding of *phantasia* in Aristotle's work is correct, it is clear that the generic nature of the term 'imagination' does not succeed to convey Aristotle's proper meaning, and is misleading to a casual reader of the text. As Schofield says, "it has been doubted whether Aristotle's *phantasia* should be rendered as 'imagination' at all."[37]

In furtherance of this argument, Noel notes that due to the inherent difficulties in translating of the word, many scholars prefer to leave the word *phantasia* un-translated.[38] She herself is opposed to the use of the word 'imagination', despite what she sees as a 'superficial suitability'. The suggestion that the term remain un-translated, it is proposed, is probably the safest approach to the problem, provided that it is understood that an explanation of the term is yet required which gives full meaning to the breadth and scope of the role that Aristotle assigns to it. Frede also points

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[36] Frede (1995: 279).

[37] Schofield (1995: 249).

[38] Noel (1997: 2).

out that "one problem is that *phantasia* does triple duty. It designates the capacity, the activity or process, and the product or result."[39]

In other words, *phantasia* cannot have a generic definition; there is Platonic *phantasia* and there is Aristotelian *phantasia*, each with its own meaning. Therefore, when we speak in this work of *phantasia*, this must be understood to be the Aristotelian usage. As to Noel's suggestion that the word should remain un-translated, her advice has not prevented many commentators from attempting a translation. Noel remarks:

> *It is easy to see why it is so tempting to use the word imagination when speaking of Aristotle's concept of phantasia. Aristotle defines phantasia most prominently at* De Anima *3.3, 428a1: "Phantasia is that in virtue of which we say that a phantasma occurs to us."*[40] *Substituting the language of imagination and image, we speak of those who have imagination as people who have the capacity for creating or recognizing images. The term imagination, in an ironic twist, also excites our imagination. Unfortunately, however, this does not appear to be the meaning Aristotle assigned to phantasia. Rather, as commentators such as Nussbaum examine the concept of phantasia, they see in it something more accurately related to appearing. The root verb,* phantazo*, is translated to mean "to cause to appear."*[41] *Thus, the terms phantasia and phantasma relate to the terms "appearances," or "what appears." This distinction between thinking of phantasia in terms of images or in terms of appearances leads to distinct views of what the term means.*

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[39] Frede (1995: 279).

[40] Note the difference in the translation to that rendered in re fn 55.

[41] Schofield (1979: 103-32); cited in Noel (1997). See also the commentary of St. Thomas on Aristotle's *De Anima*, where he says at 668(b) *"Note that "phos is the Greek for light, whence comes* phanos: ie. "appearance" or "enlightening", and *phantasia*." McInerny (2003: 203).

Although it is arguably correct to think of *phantasia* in terms of, or involving images, this argument needs further elaboration, as the word 'images' itself needs further clarification or definition before it can be meaningfully relied on. The mere fact that *phantasia* implies or necessitates *mental images* as part of a larger cognitive process does not mean that *phantasia* is merely that of imagination. Byrnum points out the problems in thinking of *phantasmata*, and translating the word, as 'images'; Aristotle, he notes, used the word *phantasia* in contexts where the word 'images' would make no sense.[42] If the term 'images' is considered to be appropriate in the context of defining *phantasia*, I posit that the following definition of 'images' may be found acceptable in the context of Noel's postulate.

'Images' must be interpreted as mental images, which exist in the consciousness of the possessor independently of the physical existence or immediacy of the object to which the mental image relates, and which are capable of accreting, or which in fact have accreted, informational content. Additionally, these images are collated and are available to the possessor in a neural network, the mind, and the accessing of this information content allows for rational decision making in a cognitive process.[43] If this is what Noel means, then arguably the term 'image' as used in the above passage is acceptable. Notwithstanding the fact that Noel has not gone so far as to explain images in the above sense, I suggest that Noel would have no objection to this proposed definition, in light of her assertion that *phantasia* is not 'imagination'. However, as is clear from the aforegoing, this is not an immediately apparent use of the term 'image'; any other uses which Noel may be postulating may therefore be unacceptable. Nevertheless, if *phantasia* is an ability to possess mental content in the

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[42] Byrnum (1993: 100).

[43] This is the paradigm of *phantasia* which is argued in terms of this work.

form of images (according to the suggested definition), the meaning and definition of *phantasia* which I propose go beyond mere 'imagination'.

A clearer example of what Aristotle appears to mean by *phantasia* is elucidated by his exposition of action, where he says that:

> *what comes first is the object of desire, which produces movement by being thought of or pictured to oneself*.[44]

This seems to indicate that the *phantasma* is not *present* to the subject, but is the product of the mind, or the mind's eye, for want of a better term.[45] Also, the *phantasma* is created, or becomes relevant for categorisation *after perception*; this is supported by Byrnum, when he observes that "Aristotle does not assume that information comes in through the senses in a form that is propositional."[46]

So far, what Aristotle appears to mean is that *phantasia* is the ability to think of, or picture, forms or objects which may or may not be available to the sensory organs. Frey, although not a supporter of animal rights due to his utilitarian stance, which denies propositional thought through lack of language, concedes that desires presuppose beliefs.[47] Beliefs, as discussed in greater detail below, are merely synonymous with propositional thought. Aristotle's sequence, as set out above, offers a supportive framework for this explanation.

Ross, in his extensive analysis of Aristotelian treatment of *phantasia*, claims that "usually *phantasia* is described as operating *only after* the

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[44] Aristotle, *De Anima*, 3:3.

[45] Since any reference to the *phantasma* appearing in the intellect/*nous* would deny *phantasia* to those animals which Aristotle denies have intellect/*nous.* This is contradictory to Aristotle's own admission that *phantasia* belongs to those that can perceive. *Nous* is not a pre-requisite.

[46] Byrnum (1993: 92).

[47] Frey, R.G. "Interests and Rights: the Case against Animals.' In Franklin (2005: 117).

sensible object has gone." (my emphasis)[48] The functions of *phantasia*, as listed by Ross, are: the formation of after-images; memory, dreams, imagination in relation to desire; imagination in relation to thought.[49] However, although Rees correctly states that he does not view the above categorisation as either correct or useful, his contention that "we may feel ourselves reluctant to commit ourselves on the subject of what does or does not represent Aristotle's deliberate view,"[50] does not fruitfully address the need to discern the mechanisms and application of Aristotle's concept of *phantasia*. Additionally, in response to Ross, it is likely that although Aristotle's paradigm of *phantasia* may have originated in the explanation of the cognitive mind's ability to retain the gestalt of a no-longer-present sensory perception, the function of the ability was – on further thought – recognised to be contributory in a far wider sense.

According to Caston, *phantasia* is an ability which allows us to remember something absent, because it serves as a kind of picture, or representation, of what was originally experienced. Also, what is remembered is not the *phantasma*, but what the *phantasma* represents.[51] This observation, insofar as it relates to the content of the *phantasma*, is arguably correct. Drawing on Caston, Watson suggests that *phantasia* may be thought of as a form of vision.[52] He does not elucidate, however, the way in which such vision functions in regard to action. Clark gives the following example, to clarify what is meant by *phantasia*:

> *'An impression is present to me and causes an agitation of the mind. This does not mean just that I receive an impression: it means that I configure my experience of the world. So, because I*

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[48] Ross, D. "*Aristotle*". 5th Edition, (1949: 142). In Rees (1971: 494).

[49] Ross, D. "*Aristotle*". 5th Edition, (1949: 142). In Rees (1971: 494).

[50] Rees (1971: 494).

[51] Caston (1996: 259).

[52] Watson (1982: 102).

> *am a human being, a being with logos, my impressions are also impressions with logos.'*[53]

At this point in the discussion it is appropriate to set out a proposal for an understanding of Aristotelian *phantasia*, to shape a foundation for the understanding and critical analysis of Osborne's arguments and other scholars' understanding of them. Before doing so, however, a number of caveats must be established. First, I adopt Noel's suggestion that the word *phantasia* be un-translated. As mentioned earlier, the word 'imagination' has connotations which are irrelevant and deleterious to an understanding of *phantasia,* in the context of an investigation into Aristotelian and contemporary paradigms of animal cognitive and rational behaviour, I avoid using this word and prefer, instead, the original term *phantasia*.

Secondly, if the above proposal is to be accepted, it must also be appreciated that *phantasia* can be conceived of in general as a cognitive ability enabling the possessor to retain mental content in the form of images. This would appear to be a general enough formulation to satisfy and address Platonic as well as Aristotelian paradigms, without impinging upon the particular functions of other cognitive or rational processes discussed by either philosopher; which is achieved by not attempting to include such specificity in the general formulation. Thus, if Aristotelian *phantasia* is to be discussed, it must also be further specified or formulated, depending on the context in which it is invoked.

I propose that Aristotelian *phantasia*, for the purposes of Aristotle's examination of the rational abilities and behaviour of man and animal, explained in terms of perception, belief, discrimination and mental content, as primarily expounded on in *De Anima*, is to be understood as:

> *'The ability of the possessor to have and to access mental content in the form of* phantasmata*, which* phantasmata *are informational and*

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[53] Clark (2000: 89).

> *emotional images composed of layers of content and which, when accessed by the possessor, can motivate or initiate action and behaviour on a rational and non-rational basis.'*

The question is then begged as to what *phantasmata* are. The answer, I suggest, is that these are the personal mental images of the possessor of *phantasia* and thus the products of *phantasia*. These images or concepts may include individual objects, abstracts of objects and pure abstracts, and they are layered with information and emotional content, and are available to the possessor's mind.

The validity of the formulation set out above is critically analysed in detail below, with the resultant conclusion that this understanding is supported by both Aristotle's writings and subsequent treatments of his work. Also, for the purposes of Osborne's thesis that *phantasia* is the basis for rationality in man and animal, my formulation of *phantasia* and the acceptance of such formulation as being demonstrable is critical to my argument.

Bearing in mind the formulation of *phantasia* which I have proposed above, I should like to provide an analysis of both Aristotelian and contemporary explanations of *phantasia*, to determine whether this formulation is capable of being validated. In regard to question whether the mental images which are *phantasmata* may be false or erroneous, reference must be made to the Platonic heritage from which Aristotle drew and continued the debate. Plato's conception of *phantasma*ta involved an inherent quality of falsehood or potential falsehood, and although Aristotle's conception is a departure from the Platonic approach, error is still allowable in Aristotelian *phantasma*ta, albeit for different reasons and on a far more limited scale. Aristotle says that sensations of proper sensibles are always true, but that most *phantasmata* turn out to be false.[54]:

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[54] Aristotle, *De Anima*, 3:3 472b 15-20.

> *'Again, sensations are always true, imaginations are for the most part false.'*[55]

This allowance for the likelihood of falseness appears to be a residue from the Platonic concept, as exemplified in the *Protagoras,* where "the power of appearances"[56] is said to be capable of confusing or deceiving measurement, or judgement, and leading the observer astray:[57]

> *'Now suppose happiness to consist in doing or choosing the greater, and in not doing or in avoiding the less, what would be the saving principle of human life? Would not the art of measuring be the saving principle; or would the power of appearance? Is not the latter that deceiving art which makes us wander up and down and take the things at one time of which we repent at another, both in our actions and in our choice of things great and small? But the art of measurement would do away with the effect of appearances, and, showing the truth, would fain teach the soul at last to find rest in the truth, and would thus save our life.'*[58]

Plato, remarks Barnouw:

> *coined the term* phantasia *as 'misleading appearance' in order to criticize the tendency of taking the senses as revealing reality. In turn, Plato suggests in the Sophist that the tendency of* phantasia *to mislead is due to the capacity of* phantasmata *to be true or false.*[59]

Reynolds argues that Aristotle, in response, "tried to free *phantasia* from its involvement with judgment and the consequent derogatory

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[55] Aristotle, *De Anima* 3:3 472b 15-20.

[56] Plato, *Protagoras*, 356d.

[57] Gallop, D. 'Dreaming and Waking in Plato.' In Anton and Kustas (1971: 199).

[58] Gallop, D. 'Dreaming and Waking in Plato.' In Anton and Kustas (1971: 199).

[59] Reynolds (2006).

implications."[60] This suggestion requires further investigation, since it seems to imply that the proper sensible is always accurately appraised by the sensory organs. However, what Aristotle seems to be meaning here, is alluded to in his next sentence, in which he says that

> *when we are sensing a sensible object accurately, we do not say, for example, that it appears to us to be a man, we do so rather when we are not sensing the object distinctly.*[61]

Before analysing the distinction between accurate and inaccurate sensation of objects, it is useful to determine the sequence of events in sensation and the resultant process which derives from sensation, including *phantasia*.

Aristotle himself says that all animals share in sensing:[62]

> '*For perception of the special objects of sense is always free from error, and is found in all animals.*'[63]

This is demonstrably correct in that this process does not contemplate anything of an order higher than the sensory organs perceiving something which is capable of perception. Thus, an animal can appraise something through its sense of sight, hearing, taste, touch or smell. Clearly, to any animal which has any one of the five senses, sensing is an available function. However, Aristotle goes on to state that not all animals share in judging rightly.[64] Apostle suggests that the phrase 'judging rightly' should be afforded here a narrow interpretation, to mean 'comparing or

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[60] Reynolds (2006). Reynolds also notes that "Aristotle does not, however, remain consistent in that attempt, since in certain contexts he speaks of *phantasiai* as being true or false."

[61] Aristotle, *De Anima* 3:3 428a 10-15.

[62] Aristotle, *De Anima*, 427b 5-10.

[63] Aristotle, *De Anima*, 3:3 427b 5-10.

[64] Aristotle, *De Anima*, 3:3 427b 5-10.

contrasting sensibles', but not *thinking*.[65] The question is then raised as to the difference between this ability and sensing.

Judging rightly is elsewhere referred to in the same paragraph as 'discriminating',[66] and this word is, I suggest, a better translation of the Aristotelian concept, since it implies a process in terms of which an animal is faced with a sense object, and must discern whether this sense object corresponds to an already known sense object (identification) and also what the appropriate response is to the identified object. Aristotle explicitly says in *De Anima* (3:3 472a 20-25) that the '*soul discriminates something'*. Discrimination involves finding that the perceived object has qualities, characteristics or features which are common or shared with a known class or type of object (such as 'dog', or 'white'), but at the same time is different in its qualities, characteristics or features from other things, or classes of things, so that the animal perceiving the object is able to draw a conclusion as to the nature or identity of the perceived object.

Apostle argues that, by saying that thinking is not a capability of animals which have no power of reasoning, Aristotle means that;

> *'animals other than men, such as dogs and worms, do not combine concepts so as to form truth or falsities; hence they have no power of reasoning, whether this be reasoning or expressing such reasoning."*[67]

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[65] Apostle (1981: 144, n10).

[66] Aristotle, *De Anima*, 3:3 472a 15-20: "*The principal differentiae by which thinkers define the soul are (a) motion with respect to place, and (b) thinking and discriminating and sensing. Both thinking and judging rightly are thought to be like a sort of sensing";* and *De Anima 3:3 462a-20-25: "In each of these two cases the soul discriminates something and knows things."*

[67] Apostle (1981; 145, n 11). Expressing such reasoning, means the linguistic expression of the underlying reasoning anima. Notwithstanding that the animal may not have this linguistics capability, the inference or corollary that there is no reasoning is incrrect, as argued herein.

Although Aristotle does not make this distinction, it appears that discrimination may be broken down into two processes, which also may be said to take place sequentially. Namely, *identification* comes first – whatever the outcome of the identification process is; in other words, whether identification is accurate or inaccurate in determining that the sensible is X and is discerned not to be Y, Z, or any other sensible. Then comes *selection* of the appropriate response to interact with the sensible X, even if that appropriate response involves no action at all.

The point of this interpretation is confirmed by Aristotle where he says that *phantasia* differs from sensation and thought.[68] Apostle also supports this premise when he says that one can form no image if one has no power of sensation, nor can one have a belief without having combined concepts or images, a process which presupposes the power of sensation.[69] In the proposed formulation, the combination of concepts or images is the combination of *phantasmata*.

Also, the correctness of the insertion of *phantasia* in the process which is elaborated above, at the second stage, is verified when Aristotle says that without sensation there can be no *phantasia*, and without *phantasia*, there can be no belief.[70] In accordance with this understanding, sensation must come first, and is therefore the first stage of the process, leading to *phantasia* at stage two, and then to stage three, belief. The outcome of these stages is action; as pointed out above, there may even occur no action at all.

Thus, the initial action is sensation, as suggested in terms of the process described above, but whether the sensing of the proper sensible is accurate

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[68] Aristotle, *De Anima* 3:3 427b 15-20.

[69] Apostle (1981: 145, n12).

[70] Aristotle, *De Anima*, 3:3 427b 15-20.

or not, is actually determined by the second stage, *phantasia*, though only in an indirect manner. The physical sensory organs will sense whatever is made available to them. This sensory process should not be labelled either as accurate or inaccurate, but may be said to deliver good or bad sensory input to the mind, where *phantasia* will either *create* a *phantasma* or *recognise* an existing one. However, depending on whether the sensory input is good or bad, the recognition of the proper sensible in relation to existing *phantasmata* in the mind will be either correct or incorrect. Also, the creation of a new *phantasma*, if none previously exists, will either shape a false/inaccurate/incorrect *phantasma* of the sensible object, or create a true/accurate/correct *phantasma* of one.

If an observer senses a proper sensible, the process of categorisation will evolve through a spectrum of outcomes. Thus, at the one end of the range, if the act of seeing delivers poor quality information to the sensory organ, the sensory organ will see a physical object only indistinctly.[71] So, if the cornea of the eye of the observer is damaged, or the observer's eyes are through old age obstructed by cataracts, the image of the proper sensible which strikes the cornea, the retina, and the light-sensing rods and cones of the eye, will be a degraded image. That is not to say that the image has been sensed accurately, or, rather, inaccurately, and at this stage the most that can or should be said is that the sensory information received by the sensory organ (the eye) is of bad quality. From this point, the sensory organ can do nothing more than pass on the sensory information to the mind which, by *phantasia,* will try to decode the sensory input and assign to it some meaningful gestalt,[72] on the basis of its existing

[71] For any number of reasons, such as the distance between the observer and the proper sensible, or the state of the eye, such that a damaged or diseased eye may not see the proper sensible as clearly as a more healthy eye might.

[72] In the sense of the original German meaning, of *form* or *shape*, rather than the meaning ascribed to it in terms of Gestalt psychology. Interestingly, gestalt psychology has a contribution to make to the debate at hand, although it has been criticised as being more descriptive of psychological processes than analytical, and has therefore been subject to

'database' of *phantasma*ta, creating a new *phantasma* or adding one to its store of information if none yet exists.

Aristotle's own example is useful to demonstrate the applicability of my proposed formulation of *phantasia*. He gives the instance of a person seeing a white object:

> '*We speak of an incidental object of sense where e.g. the white bject which we see is the son of Diares; here because 'being the son of Diares' is incidental to the directly visible white patch we speak of the son of Diares as being (incidentally) perceived or seen by us.*'[73]

To the person perceiving, the white object appears to be the son of Diares. In the proposed formulation, when the eye of the observer sees the white object (the sensible object) the sensory information is presented to the mind, for the observer to interpret. Critically, this sensory information includes perceived physical characteristics of the white sensible object. The observer, in Aristotle's example, then says that this white object appears to be the son of Diares. Demonstrably, the observer can only do so if the formulation of *phantasia* proposed is correct, since the mind of the observer already has stored an image, or *phantasma*, of the son of Diares, and relates this mental *phantasma* to the physical white sensible object. The informational content of this *phantasma* means that the observer has an expectation as to what physical characteristics the son of Diares possesses. In other words, the son of Diares is thin, tall, dark-haired, of dark complexion, and is fond of wearing a white chiton. Thus, when the observer is presented with the white sensible object, presenting a set of

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censure, such as that directed by Bruce, Green and Georgeson "*"The physiological theory of the Gestaltists has fallen by the wayside, leaving us with a set of descriptive principles, but without a model of perceptual processing. Indeed, some of their "laws" of perceptual organisation today sound vague and inadequate. What is meant by a "good" or "simple" shape, for example?*" Bruce, Green, and Georgeson (1996: 110).

[73] Aristotle, *De Anima* 2: 6. 425a 20-27.

perceived physical characteristics which correspond to the set of physical characteristics inherent in the observer's personal *phantasma* of the son of Diares, the white sensible object is identified as the son of Diares.

Furthermore, the white sensible object is identified specifically and not as any other physical sensible object. Thus the observer says that the white object appears to be the son of Diares, not someone else, such as the son of Pericles, who is fat, blond, of sallow complexion and bow-legged. Also, the sensible object is not identified with other *phantasmata* which are available to the observer's mind, such as a dog, a statue, or an apple; for the reason that the physical characteristics of these objects which provide informational content to be correlated to relevant *phantasma*ta do not correspond to the sensory information and are therefore rejected as candidates for identifying the sensible object.

In addition, if the observer judges that his sensory information may not be accurate, due to distance, poor sight, or mist, although *phantasia* identifies the son of Diares as the most likely object, the observer appreciates that he may be mistaken, and therefore claims that the white object only *appears* to be the son of Diares. When the observer eliminates doubt, by being face to face with the person, he can say that the white object which he has perceived *is* the son of Diares.

Thus, reverting back to the principle, where the sensory information is good, the observer may be confident in forming a correspondence between the proper sensible and the gestalt presented as *phantasma*, and can express this confidence by such phraseology as "the object *is* X." Where the sensory information is bad, the observer may be unsure as to the nature of the proper sensible, and while the gestalts presented as *phantasmata* may offer a range of potential objects, the observer will select one or another as more likely, and can express the uncertainty by such phraseology as "the object *appears to be* X."

Again, Apostle would agree; he suggests that Aristotle's observation that we use the words "it appears" only when we are not sensing an object accurately, functions as:

> *'a dialectical argument. We use the phrase 'it appears' when we are not sure; but we use 'it is' when we are sure. So there is an existing distinction. If the two phrases were identical in meaning, the distinction would be lost.'*[74]

Gonzalez similarly argues that, when Aristotle refers to the errors brought about by viewing from a distance, he believes that Aristotle 'most likely had in mind the false *phantasma* that results from viewing an object from too far away.'[75] Gonzalez supports this with evidence from the *Sophist*, and agrees that the false *phantasmata* listed there[76] are grounded in aural or visual *phantasia*.[77]

Apostle asserts that *phantasia* does not necessarily involve invoking a judgement in regard to the truth or falsity of the *phantasma*, such as when one imagines an image of a triangle or tree.[78] Also, *phantasia* is not opinion, nor opinion aided by or caused through sensation, nor a combination of these.[79] Aristotle's example of the apparent diameter of the sun is instructive, in that he explicates that after the visual sensory organs have viewed the sun, *phantasia* creates the perception that its diameter is merely a foot across, whereas opinion countermands this deduction and convinces the observer that the sun's diameter is actually far greater. The

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[74] Apostle (1981: 146, n 23).

[75] Gonzalez (2006: 115).

[76] Plato, *Sophist*, 165b26-27; *the ambiguity of a term, the ambiguity of a proposition, the possibility of wrong disjunction, the possibility of wrong accentuation, and similarity of termination.*

[77] Gonzalez (2006: 115).

[78] Apostle (1981: 145, n12).

[79] Aristotle, *De Anima* 3:3 428a 19-30.

value of this example is to confirm that whereas sensory information can be good or bad (resulting in accurate or inaccurate *phantasmata*), opinion, which convinces the observer into belief through a thinking process, will either be true or false. Thus, it is not that the *phantasma* of the sun is false, merely that it is inaccurate in presenting the proper sensible.

In contrast to Platonic and Aristotelian concepts of *phantasia*, Barnouw argues that the Stoics approached *phantasia* as "a mental image that contains an intrinsic claim about reality", as the foundation of knowledge underlying a continuum between perception and demonstrative proof.[80] Thus, as compared to the Platonic inherent possibility of error attendant to *phantasma*ta, the Stoics argued for a system in which *phantasmata* could be asserted more reliably as correlative to true or accurate states.[81] Barnouw argues that Aristotle began this process, by correcting the Platonic suggestion that *phantasmata* are misleading and proposing instead that *phantasia* is a "representational aspect of perception and judgement, which itself does not convey any intrinsic claim about reality."[82] What both Barnouw and Reynolds agree on is that Aristotle is not always consistent or successful in this approach.

Although he attempts to move away from the Platonic conceit that *phantasia* may be misleading, he himself admits at certain points of the *De Anima,* as well as other works, that *phantasmata* can be true or false. However, this may be explicable on the basis of his own paradigm rather than of the Platonic sense of error. Thus, Plato can be said to have argued that the *phantasma* can be true or false depending on the senses' apprehension of forms or objects, which will be either true or false depending on the reality of the form or object, not discernible by or

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[80] Reynolds (2002).

[81] Barnouw (2002).

[82] Reynolds (2006: 2).

through the senses. On the other hand, Aristotle moves away from the Platonic concept of form and can be said to argue that the senses perceive forms and objects, and if the perception is accurate then the resultant *phantasma* will be accurate and more easily true.

For Aristotle, it is only in circumstances where intervening factors, such as distance, inhibit the senses' abilities to perceive accurately, that a *phantasma* may be false. Again, this error is corrected by removal of the intervening factor, so that incorrect perception of a far object can be remedied by closer inspection. This differs significantly from the Platonic paradigm, where a form or object, no matter how closely or accurately inspected or perceived, will always differ from the true form, which is by definition imperceptible to the senses. Thus for Plato *phantasma*ta are equally capable of being true or false based on metaphysical considerations, whereas for Aristotle the veracity or falsity of the perception and resultant *phantasmata* depend purely on material factors which can be modified.

The next consideration would be whether the contention can be supported that, for Aristotle, *phantasia* is an explanator for Aristotle of false, untrue or incorrect beliefs. However, it is argued that this charge is not capable of serious substantiation and, as Watson points out, an analysis of Aristotle's position will show that he reacted strongly to any such Platonic exposition of *phantasia*. For Platonic use and understanding of the term *phantasia* seem inextricably linked to the concept of error, and to its usage by Plato to distinguish between real and not-real. However, Rees points out that, although both Plato and Aristotle contrast appearance with reality, Plato emphasises the distinction metaphysically, whereas Aristotle does not.[83]

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[83] Rees (1971: 492), citing Plato, *Republic*, X, 596E and Aristotle *Nichomachean Ethics*, 3.3 4a32.

In addition, Rees argues that "in general, *phantasia* and allied notions seem, in Plato, to have a clear implication of error, not least in metaphysical contexts."[84] The metaphysical distinction which is found in Plato may derive from his particular idea of the denial of substantiality of the physical world.[85] Hence the use of *phantasia* by Plato as a device to draw the distinction between the *appearance* of the physical world versus the *reality* of the world of forms, where the *phantasma* is equated to a shadow or reflection, with the clear implication of the imperfection or error of the shadow/reflection, which is a mere derivative of the perfect Form which casts it.[86]

If so, Rees is certainly correct in thinking that the Platonic use carried with it an underlying assumption of error, and this error must in fact form the basis of the appearance of every proper sensible perceived by the physical senses in Plato's physical world. However, it is clear that there is a significant difference between the Platonic and the Aristotelian use. Rees reminds us that Aristotle not only abandoned Plato's theory of Ideas, but critically, allowed substantiality to the physical world.[87] In consequence, the connotation of error, which is demonstrably evident in the Aristotelian conceit, is a paradigm of error which is fundamentally different from the Platonic one.

The error of possible (but not inextricably inherent) difference between a *phantasma* and the reality of a proper sensible β is that, the reality of the proper sensible β is grounded in a substantial physical world, and the error which can arise in the *phantasma* of the proper sensible β has its origin in an inaccurate perception by the senses of the proper sensible β.

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[84] Rees (1971: 493).

[85] Rees (1971: 492).

[86] Rees (1971: 492). Plato, *Republic* VI, 510A.

[87] Rees (1971: 492).

Accordingly, the variety of *phantasmata* which can be generated in regard to proper sensible β is limitless, depending on the number of observers of proper sensible β, as well as the accuracy of their observations. Also, it is interesting to note that the *phantasma* of any observer can be modified, replaced, updated or corrected, by the receipt of new, more accurate physical sensory receptions of the proper sensible β.

What is also critically important is that the Aristotelian usage of the concept of *phantasia* must, for the purposes of this dissertation, be studied in the context of the works of Aristotle which relate to rationality in animals. Thus, although it is useful to consider other contexts in which Aristotle utilises the word, there does not need to be strict reliance on these usages to investigate *phantasia* as animal rationality. For example, consider the work of Gonzalez in which he analyses the meaning and function of *phantasia* in one of Aristotle's works other than the *De Anima*.[88]

Whereas in *De Anima* the term refers in general to a mental capacity or cognitive ability, whereby mental images become available to the subject who possesses the ability, Gonzalez mentions that *phantasia* is also referred to by Aristotle in the third book of *Rhetoric*, and that translators and commentators have uniformly rendered *phantasia* in this context as 'ostentation' or 'mere appearance' or 'outward show'.[89] Clearly, this usage is a distinct departure from the meaning which is attributed to *phantasia* in the context of animal rationality in *De Anima*. A simple substitution of the attribution given to the term in *Rhetoric* with the attribution given to it in the *De Anima*, in the context of animal rationality, will suffice to highlight the incongruence. If *phantasia* were be taken to mean, uniformly and consistency 'ostentation' or 'outward show' to Aristotle, his discussion of

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[88] As implied by the name of the article – Gonzalez (2006: 99-131).

[89] Gonzalez (2006: 99).

the ability and function of *phantasia* in the *De Anima* would become incomprehensible.

It is thus demonstrable that other usages of the terminology of *phantasia* in peripheral fields of the Aristotelian corpus may not unnecessarily be instructive to its specific usage in *De Anima*, or of further assistance towards understanding Aristotle's investigation into animal rationality, and his conclusions in this regard.[90] In support of the deduction that *phantasia* in *De Anima* is not equivalent to *phantasia* in *Rhetoric*, Gonzalez argues that Renaissance scholars preferred to refer to the wider context of Aristotle's usage of the term, in an attempt to make sense of what he meant by *phantasia* in the *Rhetoric*.

In other words, while Gonzalez and others find 'ostentation' as a translation of *phantasia* in *Rhetoric* to be less than helpful,[91] Renaissance scholars were similarly dissatisfied with such a rendering and looked instead to the more serious meaning of *phantasia* derived from works such as *De Anima*. Gonzalez remarks:

> *Many Renaissance scholars insisted on reading the Rhetoric against the background of Aristotle's psychology, and articulated the relationship between* nous *and* animus *on the fulcrum of phantasia, focusing on the role played by* elocutio *in the acquisition of knowledge. It is fair, I think, to say that they allowed the concept its full psychological import*.[92]

Gonzalez' further statements, however, betray the fact that his interest in this discussion lies in elaborating on *phantasia* in *Rhetoric*, rather than

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[90] Peripheral in regard to the subject matter of this thesis.

[91] Gonzalez (2006: 100). He quotes Green, who states that "I cannot find a modern translation which takes the word *phantasia* seriously."

[92] Gonzalez (2006: 100).

exploring its functionality as a component of animal thought processes, which maybe equated to rationality, or lead to the attribution of rationality in animals. He notes that "by 'psychological' I mean a view of *phantasia* as a faculty of the *human* psyche."[93] This remark is relevant to the purposes of this dissertation, since the *exclusion* of *phantasia* as an animal faculty is precisely the gap in scholarship which grounds the subject of my investigation. Insofar as the Renaissance scholars' contribution is concerned, the conclusion may be drawn that the reading of *phantasia* more pertinent to the present study appears to be the one from *De Anima*, and that instead of looking to *Rhetoric* to find meaning in *De Anima*, we should look to *De Anima* to find meaning in *Rhetoric* – within the ambit, of course, of *phantasia.*

In our efforts to discern what Aristotle meant by *phantasia* in his investigations, it may be useful to consider what *phantasia* is *not,* before attempting to define positively what it is. Aristotle himself undertook this exercise,[94] and in this regard he states that *phantasia* is not perception,[95] and it is also not intellect.[96] That it is correct to postulate *phantasia* as separate from intellect or reasoning emerges clearly from Aristotle's later thoughts on this subject. In *De Anima*, he tells us that *phantasia* is a type of thought or intellection (*noesis*),[97] but points out immediately that *phantasia* is contrasted to intellectual reasoning, and that some beings follow their *phantasia* despite knowledge,[98] and also that some animals act without reason. But since Aristotle has already admitted that all beings which have perception have *phantasia*, and not all beings have intellectual

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[93] Gonzalez (2006: 100).

[94] Aristotle, *De Anima*, 428b10-17.

[95] Watson (1982 : 106).

[96] Osborne concurs; see Osborne (2007: 85).

[97] Aristotle, *De Anima* 3:3 433a10-12.

[98] For example, knowing that some action is unethical, but committing it nevertheless.

reasoning, then *phantasia* and intellectual reasoning are not one and the same. Aristotle was at pains to show that there is a distinction.[99]

Therefore, Watson extrapolates, *phantasia* is basically the faculty of desire which moves all animals to action.[100] This deduction is incorrect, since inclination, or Watson's faculty of desire – being either desire, I suggest, for or aversion to an action – is arguably a separate function from *phantasia*, and is better understood as a subsequent cognitive process, which takes place after *phantasia* has presented informational content, through mental images (*phantasmata*), to the possessor.

Since the information content can lead the possessor to either being inclined or averse to the action to be taken, it is only after the faculty of desire has acted that the informational content of the *phantasma* leads to a cognitive result. A practical example may suffice. A human perceives through the visual sense organ that a plate on a stove is glowing red. *Phantasia* allows the human access to informational content, through the following process: the plate is recognised as a stove plate, through identification of the visual image with the mental image/*phantasma* of a stove plate; the general functions and use of the stove plate layer this content. Also, the visual perception of the plate as red accesses information content, which indicates that the plate is hot, and that the human will burn himself if he touches the plate. On presentation of the informational content in respect of the identified visual image to the human through *phantasia*, the human's faculty of desire operates to make the human averse to touching the plate, knowing that to do so will result in harm.

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[99] Watson (1982: 105).

[100] Watson (1982: 102).

Clark's premise that a human being is a being with *logos,* and that, accordingly human impressions are also impressions with *logos,* is repeated here*:*[101]

> *An impression is present to me and causes an agitation of the mind. This does not mean just that I receive an impression: it means that I configure my experience of the world. So, because I am a human being, a being with logos, my impressions are also impressions with logos.*[102]

This premise presupposes that both humans and animals can have *phantasia*; this is at least implied, since he appears to create a category of *phantasmata* (impressions), which have *logos*. Other *phantasmata* – animal *phantasmata* – presumably do not. However, Clark relies solely on the assumption that animals do not have *logos* and that humans do[103] – in order to distinguish between human and animal *phantasmata*. What may be the case, as opposed to Clark's supposition, is that animals, too, possess *logos*.

That is the argument of cognitive ethologists. If it is correct, then animal *phantasmata* are also *phantasmata* with *logos*. In fact, what is argued below is that *both* humans and animals have *logos*, and that the key to determining how far the similarities between human and animal *logos* stretch, and where the differences between the two can be appreciated, lies in the types of *phantasmata* that both can have. The contention is that both humans and animals possess *phantasmata,* which deal with proper objects, as well as abstracts and concepts, but that only humans have *phantasmata* of abstracts of concepts. The commonality then is that both humans and animals possess *logos* through *phantasia.*

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[101] Stated above at n53.

[102] Clark (2000: 89).

[103] For no objectively justifiable reason. This appears to be the instinctive bias, possibly predicated on the thesis that lack of language equates to a lack of *logos*.

This commonality contradicts the argument that language (verbally expressed) is the key to *logos*, and instead introduces the new postulate that *phantasia* is the key to *logos*. Admittedly there is a difference between the two species: however this difference is only that humans have an additional type of *phantasma*ta available, but one that does not require *logos,* and one without which rational behaviour is still possible. Where there is a difference between human and animal, it is, therefore, not a qualitative one, but one of *degree only*. The question as to the types of *phantasia*, as identified by Aristotle, is therefore appropriate, as posed by Watson:

> *If phantasia is present in at least all the higher animals, [Aristotle] has also to show what, if any, its special function in man is. He says, in the first chapter of the Metaphysics (980b 25 ff.), that the other animals live by their phantasia and memories, but man has something more. But at what point and why does the difference arise?*[104]

[104] Watson (1982: 101).

CHAPTER FIVE

PHANTASIA BOULEUTIKE AND *PHANTASIA AISTHETIKE*

In the suggested formulation of *phantasia* which will be elaborated further below, three broad categories of *phantasma*ta will be proposed to explain *phantasia* as propositional thinking. These categories are, first, *phantasma*ta of individual objects (*this* book; *this* man; *that* dog, *this* Persian); secondly, *phantasma*ta of abstracts of objects (books; men; dogs, Persians); and thirdly, *phantasma*ta of abstract concepts (the square root of two; Justice).

Whereas the aforegoing terminology attempts to provide clarity to the classification of the types of *phantasmata* and the type of thought they involve or represent, a more general term is sometimes employed by scholars to distinguish between tangible and corporeal items, and intangible and incorporeal items. The general term in use is that of 'concepts.' Arguably, this term is not particularly helpful to distinguish between *phantasmata* of abstracts of objects and *phantasmata* of abstract concepts, and although the word is useful to refer in general to the set to which both belong, it is too imprecise when making the necessary distinction between the types of *phantasma*ta involved in Aristotle's *phantasia.*

Instead of the term 'concepts', I suggest that the terminology of the proposed formulation be adopted when analysing *phantasia*. Thus, *phantasia* is not simply a process of thinking of either objects or concepts. Critically for the purpose of analysing whether or not animals think conceptually, the type of concepts that are involved can and must be differentiated. I do not intend to delve into definitions of ‘concept’ that would result in a debate between such approaches as Concept

Cartesianism and Concept Pragmatism.[1] The *phantasia* paradigm developed in this dissertation relies on a more general approach towards concepts, that neither relies on nor is affected by the niceties of difference between concepts in the aforegoing schools of thought.

The question of thinking in conceptual terms was long considered in Greek philosophy, and may have been the basis upon which Aristotle formed his theory of *phantasia bouleutike*, although there is no explicit reference to earlier philosophers who either wrote or thought about these issues. From Parmenides and Gorgias, philosophers and thinkers contemplated the human ability to conceive of "what is not".[2] Aristotle formalised this ability in his distinction of the types of *phantasia*. Interestingly, this is where he continued the tradition of Parmenides and Gorgias and reserved for humans the type of *phantasia* to think of what is not - but denied it to animals.

There are two types of *phantasia* referred to in the Aristotelian corpus, *phantasia bouleutike* (or *phantasia logistike*)[3] and *phantasia aisthetike*. Of these, the first type of *phantasia*, *bouleutike* is proposed by Aristotle to be connected with deliberation, an ability which is supposedly available to

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[1] Rives (2009: 211-238), sets out a useful analysis of these approaches. In essence, Concept Cartesianism is "purely referential: [a concept] has its content not in virtue of any referential properties, but rather in virtue of standing in a certain nomological relation to the property of being the concept instantiated in the environment", and that "to posses a concept, thinkers must simply possess a mental representation that is nominally locked onto the properties of the concept." Rives (2009: 212). On the other hand, pragmatists claim that "concepts are individuated in terms of the roles they play in the cognitive lives of thinkers in terms of inference, perception, and judgement", Rives (2009: 211). For the purposes of this thesis, the pragmatist approach must be preferred, since *phantasia* is argued to be individuated in terms of the content of the mental representation, which differs from thinker to thinker in respect of even the same proper sensible.

[2] Caston (1996: 253).

[3] In this work, the term *phantasia bouleutike* will be used for consistency.

humans and not to animals. The second – *phantasia aisthetike* – is supposedly restricted to animals only. Watson's contention that *phantasia aisthetike* is reserved for animals is grounded in the argument that *phantasia bouleutike* incorporates intellectual discrimination, which would appear to put it beyond the capability of animals.[4]

However, I suggest that Watson appears to be incorrect in this thesis. My objection is borne out by the argument that any such assertion is in direct contradiction to Aristotle's insistence that *phantasia* is not *noesis*. It may seem like *phantasia* is *noesis*, Aristotle says, but in fact it is not. If *phantasia bouleutike* is not about and does require *noesis,* but if it must also be accepted that it is a type of *phantasia* available only to humans, in what way does it differ from *phantasia aisthetike*?

The answer appears to be available only in a paradigm in which the human ability of intellectual and rational discrimination (*noesis*), which motivates actions, can be divorced from *phantasia*, yet still be retained as a critical component of the action process. This is possible, provided that a particular understanding of *phantasia bouleutike* is incorporated into the paradigm; this understanding, which is tied to Osborne's thesis in regard to thoughts of abstracts,[5] fits into *phantasia* as the last of the trilogy of concepts, namely the ability to think of concepts of pure abstracts (which is a human ability only).

Phantasia bouleutike, if taken not as an ability to make decisions on an intellectual basis (Watson's thesis), but instead as the ability to conceive of *phantasmata* which are purely abstract (Osborne's thesis), then does not equate with *noesis*, but does lead to *noesis* being applied. This much is argued by Osborne - an example being Osborne's square root of two, or

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[4] Per Watson (1982: 102).

[5] What was termed concepts of pure abstracts.

the perfect husband. Equally purely abstract are regret, justice, charity, and any other ethical considerations, which exist not as perceptual forms, available to the sensory organs, as in the case of *phantasmata* of objects, and which therefore cannot exist as *phantasmata* of abstracts of objects. They must, therefore, by a process of elimination, in terms of the proposed formulation, be *phantasmata* of pure abstract concepts.

The validity and strength of my formulation to deal with the concepts involved in *phantasia bouleutike* can now be tested. No-one has ever seen, felt, heard, taste or smelt Justice, or the square root of two, or regret. These have no form, no tangibility, no corporeal existence as material, substantial, physical objects. An example may serve to illustrate this: if *phantasia bouleutike* allows humans to conceive of regret as an abstract moral state, arising from *phantasia* of pure abstracts, then in conjunction with the conceptual moral state of death arising from *phantasia* of pure abstracts, the human subject can apply *noesis* to his or her inclination to kill X, and reach a decision whether to commit the act, or to refrain.

When posed in this manner, Watson's idea of *phantasia bouleutike* as incorporating intellectual discrimination appears more acceptable, but only because there is an element of moral discrimination involved in this example. However, the answer to why this suggestion looks correct but is not, becomes apparent when *phantasia* is correctly divorced from *noesis*. This is possible, if *noesis* is seen as the process of intellectual discrimination, and *phantasia bouleutike* is seen as the ability to conceive of a pure abstract, such as a moral or ethical abstract, which forms the subject matter of the intellectual discrimination that takes place by *noesis*.

If so, Watson only appears to be correct when he states that *phantasia bouleutike* incorporates intellectual discrimination, because he is correct in the sense that *noesis* of the human type makes an intellectual discrimination only when *phantasia bouleutike* presents it with something to discriminate in relation to. But that is far as he can go. To equate *noesis* with *phantasia bouleutike*, is the step too far which he has taken.

In the example stated above, when Y considers killing X, *phantasia bouleutike* allows Y to conceive of what it means for X to be dead, and whether Y may regret the action, or be punished for it. The *phantasmata* of regret, punishment, and the death of X, are pure abstract concepts arising out of *phantasia bouleutike*. Once *noesis* is applied to the prospected consequences, a choice is made, and Y will either kill or not kill X. Isolating the pure abstract of regret, it is clear that *phantasia bouleutike* is not *noesis*, since *phantasia bouleutike* only presents regret to the intellect, without any kind of choice or discrimination, and *noesis* is then applied to make a choice.

The mere fact that intellectual discrimination, or *noesis*, is involved in a cognitive process wherein *phantasia bouleutike* presents *phantasmata* of pure abstract concepts to the subject, does not mean that *phantasia aisthetike*, in which *phantasmata* of objects or *phantasmata* of abstracts of objects are presented, cannot also involve *noesis*. Just as much as *noesis* must be involved when considering *phantasmata* of pure abstract concepts, such as regret or Justice, allowing the subject to decide upon a course of action, *noesis* must be active when considering *phantasmata* of objects or abstracts of objects, to select a course of action based on the information layers of such *phantasma*ta - such as whether to eat an object which is recognised as a ripe apple, or to decide not to pick up an object which is red hot and may therefore harm the subject.

This paradigm also recognises that *noesis* may apply to a set of circumstances in which both *phantasia bouleutike* and *phantasia aisthetike* present *phantasma*ta to a subject. The *noesis* of an Athenian *strategos* surveying the battlefield at Marathon results in his giving his troops the order to assemble up in a particular formation, based on the geographical information available to him from surveying the terrain,[6] the number of

[6] *Phantasma* of the individual object: this plain on which his army is arrayed; that mountain on the right flank and that river on the left flank.

Persian troops arrayed against his own,[7] the reputation of the Persian Immortals,[8] the morale of his own men, and considerations of revenge and civic pride.[9] In aggregate, a decision is made to re-group in such formation, to attack the enemy at such point, to attack at such time and what tactics to adopt.

In the case of animals, although *phantasia bouleutike* is supposedly not an ability available to them (according to Aristotle), *phantasia aisthetike* is. Additionally, as argued above, *noesis* is also applicable to *phantasia aisthetike* and allows for a lion on the prowl for prey to have a *phantasma* of either an object or an abstract of an object, in this case an antelope, and to go searching for it. Once the prey is perceptually obtained, the lion's inclination is to kill it and eat it, and this action is initiated, since the *phantasma* of the antelope includes the *phantasma* of satiation of hunger on eating it.

Here, there is no *phantasia bouleutike*, since the lion does not ponder the ethical consequences of killing it's prey, and does not regret having done so, once the act is committed. Even so, all this means is that the animal does not possess *phantasmata* of pure abstracts of concepts; it does not mean that it does not have either *noesis*, or *phantasmata* of pure abstracts. If even this much were to be admitted, the argument against the lack of rationality in animals would be closed. However, it is not conceded that animals do not have *phantasmata* of abstract concepts; as set out below, higher primates exhibit behaviour which gives credence to an argument that they have access to abstract concepts such as empathy and grief.

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[7] *Phantasma* of the individual object: this army arrayed in front of the *strategos*.

[8] *Phantasma*ta of the abstract of objects: the supposed qualities of Persians in general, or the soldiers in the Immortals in general.

[9] All *phantasmata* of concepts of pure abstracts.

As has been suggested, *phantasia* provides a continuum between man and animal, but since *phantasia bouleutike* and *phantasia aisthetike* appear to be different, may a unity of the content of animal and human mind be claimed? Arguably yes, since the only manner in which *phantasia bouleutike* and *phantasia aisthetike* differ is that *phantasia aisthetike* presents *phantasmata* of objects and abstracts of objects, and *phantasia bouleutike* presents *phantasmata* of pure abstracts. Whether Watson would agree with the justification for generality of *phantasia* and particular specificity in regard to *phantasmata* of individual objects, abstracts of objects and of pure abstract concepts, is another matter. He does not display as great a scepticism as other scholars in the assessment of *phantasia* in Aristotle's work and contrariwise believes that there is some cohesiveness to be found.

While it is impossible to stretch what he has to say in support of Osborne's paradigm, since his examined works do not deal with the particular subject matter of her focus, there is nevertheless support for the general conclusion that Aristotle seems to have conceived of *phantasia* in a general sense, and that the later, more precise explanations of it which he gives only *seem* to be inconsistent with the general formulation, since it functions in different senses.

As has been shown, such an inconsistency would be apparent if *phantasia* were invoked in a discussion of intellectual discrimination: *phantasia* would then bear greater resemblance to *noesis* and would be inconsistent with what I have said of *phantasia* in regard to presentation of images as driving inclination and purpose. If this is the case, then Watson's view of overarching unity is, as already argued, correct, and the specificity of detail does not detract from the generality of the ability.

Aristotle may have conceived that *phantasia* is a complex function, which performs a number of actions in different situations; some of these actions will be described by one illustration with its own technical vocabulary, and

a different action or function, although still performed by *phantasia*, may be sufficiently differentiated in one group or available to one group only, and therefore discussed only in that context, and then with its own explanation and technical vocabulary. For example, the eye performs the function of seeing visual objects and sensing colour and transmitting that information to the brain, and this function is common to all human and non-human animals which have eyes.

Certain human animals, though, and some non-human animals have eyes which may also sense depth and perspective, whereas other non-human animals do not. Also, whereas human eyes perceive the full spectrum of visible light, not all non-human animal eyes do so. Some see a limited spectrum, to a greater or lesser degree or at various points of the spectrum.

Thus, in an Aristotelian discussion of a commonality of the eye in animals and humans, the eye will be treated as the sense organ in which the ability to see and sense colour is stressed, as a *general* ability. If, later, depth and perspective are discussed, again the eye will be mentioned, but the discussion, the explanation, the function and the vocabulary in explaining the function of the eye to perform these specific activities must differ, and must be more technical and precise in order to distinguish details. It is not sufficient, when describing the perception of perspective or depth, to simply say that the eye sees; the animal eye also sees, but it does not sense depth.

'To see', or 'seeing' are therefore acceptable terms to *describe* the general function of the eye, but inadequate when discussing depth perception. Thus, when we speak of depth perception, and not merely about 'seeing', the conclusion should not be that a different organ other than the eye is being talked of, or that what is said here about the eye contradicts what was previously said. Instead, since the eye is complex and performs a number of functions, it is to be expected that there will be a difference in each discussion of each discrete function.

Thus, when *phantasia bouleutike* is discussed, it is of necessity linked to *noesis* and other human intellectual functions, which makes it appear as if it is something different to *phantasia aisthetike*. It is, but only in application, and *phantasia* in general remains the same. The commonality lies then in the point that both animals and humans possess a similar ability for *phantasia.*

The fact that humans possess *phantasia bouleutike,* which is the ability to think of *phantasmata* of abstract concepts, presents only a qualitative difference, and not an absolute denial of *phantasia* to animals. At the very least, man and animal share *phantasia aisthetike*, since not all thoughts which humans have are of pure abstracts, and the content of their thoughts is filled with objects and abstracts of objects, just as are animals'. The outcome of this inquiry then is that Aristotelian *phantasia* does appear to provide a common ability in man and animal. This corresponds to Osborne's conception of a shared ability in man and animal to have a content of thought filled with objects, which displaces the need for language as the *sine qua non* of rationality.

What is also interesting to consider is whether *noesis* is necessary for *phantasia aisthetike,* in order to explain action once the mind is presented with the *phantasma* of an object or an abstract of object. Although such an exercise is beyond the scope of the present work, any such positive finding may further support the continuity between man and animal in the *process* of thoughts, and not simply the *content* of thoughts, which would further support Osborne's thesis of a kinship between man and animal, on the basis of shared functions. As before, where either kinship or difference is argued, the relevant ethical conclusions may be drawn.

In order to further investigate the two types of *phantasia (bouleutike and aisthetike),* as well as to determine whether the proposed formulation and its terminology of *phantasma*ta of individual objects, *phantasma*ta of abstracts of objects, and *phantasma*ta of abstract concepts is sustainable,

it is salutary to review Osborne's work on the topic of *phantasia* as a bridge between human and animal behaviour, in which she has analysed in great detail the concept of animal and human thought processes and purposive behaviour.

Her stated aim in this regard is to show that Aristotle used *phantasia* as a *mechanism* to explain both human and animal behaviour, and thereby to show that there is a continuity in animal and human conscious behaviour, which may necessitate a rethinking of human morality *vis a vis* animals.[10] However, Wedin cautions against an interpretation of Aristotle's work which imposes anachronistic expectations on his work; he notes that "if we are interested in the form of Aristotle's theory, there is no substitute for deliberate and detailed attention to what he says. This does not exclude, but it does constrain, the use of contemporary frameworks."[11]

Wedin's apprehensions are indeed valid. However, we must note that Osborne's thesis is posited both as a re-examination of Aristotle's work on *phantasia* and as her own extension of *phantasia* to animals, which seeks to provide a paradigm for theorising modes of animal cognition. Osborne supports, in this way, behavioural studies which suggest that such modes of cognition exist and that animal behaviour is not simply instinctual or non-rational. Wedin would arguably allow Osborne's thesis 'constrained use of a contemporary framework'.

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[10] Scholars such as Newmyer have approached the same question with reference to later ancient philosophers and zoologist, such as the elder Pliny, Plutarch and Aelian; Newmyer (2005: 3-17) His conclusion is similar to Osborne's, that assertions by such ancient writers that some animals are capable of tool use indicates the presence of conscious mental activity which "may compel humans to rethink their treatment of animals." Newmyer (2005: 3-17). See also, Newmyer (1992: 38-54).

[11] Wedin (1998: 19).

Thus, for the purposes of my work, animal *phantasia* as a descriptor of animal rationality is Osborne's *phantasia*, rather than Aristotle's *phantasia*. With this caveat, Osborne's arguments are to be supported, and what has been argued so far in regard to *phantasia bouleutike* and *phantasia aisthetike*, as well as the applicability of *noesis* to both of these, tend to support that she is correct. However, a more in-depth analysis is necessary. As such, what follows is a critical analysis of Osborne's argument in this regard, bearing particular emphasis on the role that *phantasia* plays in explaining inclination and purpose in human and animal behaviour.

CHAPTER SIX

ARISTOTELIAN *PHANTASIA* RE-EXAMINED: OSBORNE'S THESIS OF *PHANTASIA*

In the context of the discussion on *phantasia* in Chapter 2, as well as the distinction I have drawn between *phantasia bouleutike* and *phantasia aisthetike*, the question must be addressed whether *phantasia* is indeed part of a reasoning process in animals. A simple response to Aristotle's explanation is to assert that *phantasia* allows for reason in animals, after perception and judging of sense objects, as explained by Byrnum:

> *In animals without intellect, the entire process including the discriminating or 'judging' is automatic – resulting from the natural physiology of the animal and the particular physiological state that it is on at the time. The information processed in such a case is not propositional, since there is no language capacity in such an animal. In animals with intellect (and therefore language) on the other hand, the discriminating and judging process can include or generate various linguistics entities such as belief and knowledge*.[1]

It is immediately apparent from the passage above that language is claimed to be linked to intellect, so again the assumption is that lack of language in animals equates to lack of intellect. Lack of intellect leads to inability to possess belief or knowledge; thus, there must be some other explanation for animals that lack language but act in ways which appear rational. The explanator then is that reactions are automatic, flowing from physical and physiological characteristics.

If anything, this is more difficult, if not impossible to prove, as compared to the paradigm in which reactions are not automatic, but in which intellect, through non-linguistic propositional thought (involving belief and knowledge), provides for the kind of discrimination that leads to action. In short, this is the position which is adopted by Osborne, and which calls for an in-depth, critical analysis in order to

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[1] Byrnum (1993: 100).

determine if Aristotle's position, as succinctly put by Byrnum above, is capable of re-examination.

Even if it is accepted that Byrnum is correct in his statement of Aristotle's position, and even if it is posited that Aristotle did not allow for the possibility of rationality through *phantasia* in non-linguistic animals, Byrnum himself has supported the argument[2] that, since the milieu, in which cognitive ethology has produced new evidence and theories of propositional thought, is different from Aristotle's milieu, in which certain physical and physiological assumptions were made, it is appropriate to make the necessary adaptations to Aristotle's theory to allow for Osborne's arguments. Accordingly, provided it is borne in mind that Osborne should be acknowledged to be arguing for an *adaptation* to Aristotle's theories, rather than advocating that her explanation *is* Aristotle's theory, the analysis can proceed.

Osborne begins from the premise that she is not convinced that Aristotle is fundamentally opposed to admitting rationality in animals; the negative presupposition of which is relied upon heavily by other scholars, as well as supposedly by the ancient heirs to Aristotelian thought in this matter, the Stoics and Epicureans, who are argued to have based their negative attitudes towards the existence of rationality in animals on Aristotelian precedents. In an important chapter in her work *Dumb Beasts and Dead Philosophers*, Osborne begins her analysis of Aristotle's thoughts on animal rationality by warning that the difference drawn in his work between animal capacities is merely a *supposed* distinction.[3]
If this is correct, and I argue that it is, there is something fundamentally wrong in the arguments of the Stoics continuing where Aristotle left off; Sorabji's statement that the Stoics did so may need to be re-examined.[4] On the contrary, instead of judging that the lack of language in animals, as a vehicle of continuity between

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[2] Byrnum states: "Aristotle's theory of perception is often thought to be of merely historical interest. This misconception derives, in part, from the fact that Aristotle employed physical and physiological theories that are now outdated. It is relatively easy, however to replace Aristotle's physics and physiology with modern theories and still preserve his basic account of perception." Byrnum (1993: 90).

[3] Osborne (2007: 63).

[4] See n 23.

human and animal cognitive capacities, to be an issue that is "permanently closed because of the obvious differences",[5] Osborne argues for the position that Aristotelian continuity between animals and humans through *phantasia,* can give rise to and sustain a humane and perceptive attitude towards "non-linguistic members of our own species and other creatures."[6]

What is important for Osborne, here, is to resist the notion of language as a (supposed) fundamental barrier between humans and animals,[7] and to foster the alternative supposition, far more important, that it is not language but rather the *content* of animal and human thoughts, which should be crucially signal of commonality. Whereas lack of linguistic ability undeniably poses a barrier between humans and animals, and implies a fundamental difference, the unity in content of animal and human thought evinces similarities.

From this, ethical conclusions can be drawn. While these conclusions may have far-reaching consequences for the human-animal dynamic, they are not the focus of this dissertation. I strongly support Osborne's thesis that language should not be taken as an indicator of underlying rationality, and the corollary that the absence of language is not necessarily an indicator of absence of rationality. This position

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[5] Walker (1983: 383).

[6] Osborne (2007: 63).

[7] Although Aristotle and the Stoics shared a common belief that reason goes hand in hand with speech, each had a difference conception of what would amount to speech. It appears that for Aristotle, the equation of logos as both reason and speech may not have needed further deliberation, and thus any animal – human or non-human – which exhibited speech could be regarded as also possessing reason. This is perhaps as far as this argument can be taken, although Aristotle may have had to admit that the quality of reason could be markedly differentiated even among those possessing it. Thus, categorisation of animals is into rational and non-rational animals; a further sub-categorisation would be into rational human animals, rational non-human animals, and irrational non-human animals. When the Stoics examined the issue, their approach argued that the equation of logos as reason and speech could only be maintained if a particular type of speech was contemplated. Their hesitance to allow reason to any non-human animals meant that speech could now be of two sorts. Internal speech (*logos endiathetos*) was the language of thinking, and external speech (*logos prophorikos*) was the language of uttered speech. Thus, even if *logos prophorikos* could be observed in animals, this did not necessarily equate to *logos endiathetos*. By this device, all animals were argued by the Stoics to remain *ta aloga.*

contests the entrenched view that the capacity to think depends on the ability to use language.[8]

As mentioned above, this viewpoint holds a long pedigree, having been supported by such thinkers as Descartes, and not having been relinquished even to this day, by such utilitarian apologists as Frey,[9] despite having been discredited. Osborne is not alone in her views; Bermudez argues strongly in his work *Thinking without Words*,[10] that the behavioural and cognitive sciences have progressed beyond the point at which the deduction that animals' lack of rationality is implied by their lack of linguistic ability, may be plausible. In its place, scientists have attempted to discern from behavioural studies whether animals utilise rational cognitive processes for action. Walker supports and contextualises this approach by arguing that:

> *Thought is a word, rather than a thing, and we can use the word as we choose. If we use it to refer to psychological processes which cannot take place in the absence of human linguistic abilities, then animal thought is a conjunction of words that has no real meaning. But if we take it to mean that some thinking can be done without words, and that a thought may be a mental disposition, an image, intention or anticipation, then the question of whether this sort of thought can be said to occur in animals other than ourselves becomes genuine.*[11]

The consequences of this new approach are manifold. Not only does this recognition allow that rationality may exist in the absence of language, but it also allows for scientists and scholars to attempt to search for rationality and human analogue cognitive process in animals by means other than language: an example is Osborne's search for a paradigm of non-linguistic rationality in non-human animals through the Aristotelian ability of *phantasia*.

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[8] Franklin (2005: 115).

[9] Franklin (2005: 117).

[10] Bermudez (2003).

[11] Walker (1983: 382).

Allen agrees that, for the major part of the twentieth century, studies into animal behaviour denied the possibility of rational thought according to structures or processes analogous to human cognitive processes, and that "animal psychology was on a behaviourist track that explicitly denied the science of the animal mind."[12] Utilitarians such as Frey could, in terms of such a general approach, argue that language is essential for rational behaviour, on the basis that:

> *if what is believed is that a certain sentence is true, then no creature which lacks language can have beliefs, and without beliefs, a creature cannot have desires.*[13]

But a change has come about, and it is worthwhile framing the point in Bermudez' own words:

> *The contemporary behavioural sciences have almost completely abandoned a longstanding tenet in the study of cognition, namely that language and thought go hand in hand, and hence that the study of thought can only proceed via the study of language. Until recently, even those who held that thought could, in principle, exist without language had little idea how to study thought except through the language by which it is expressed. But current practice in the study of animal behaviour, in the study of pre-linguistic infants, and in the speculations of cognitive archaeologists about the evolutionary prehistory of homo sapiens, has left these assumptions far behind.*[14]

What seems clear is that science has progressed beyond theories in which animals' cognitive processes are described in terms of innate releasing mechanisms or mere stimulus response concepts. As Bermudez points out, cognitive ethologists are now prepared to accord animals more advanced, rational processes.[15] Cognitive ethology,[16] Bermudez states, starts "from the assumption that animals have certain

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[12] Allen (1997: 227).

[13] Frey, R.G. "Interests and Rights: the Case against Animals." In Franklin (2005: 118).

[14] Bermudez (2003: 3).

[15] See also Allen (1997: 227).

[16] A neologism coined by Griffin; see Allen (1997: 230).

desires and certain beliefs about how the world is organised and act on the basis of those beliefs to try and ensure the satisfaction of their desires."[17] In short, what Bermudez proposes is that animals act rationally in order to achieve goals, and animal actions are the product of rationality, rather than of instinct or conditioning.

So where does the unity in content of animal and human thought come from in Aristotle, and is Osborne correct when she claims that this is evident in Aristotle's work? As mentioned earlier, Aristotle has many things to say about animal abilities, but, Osborne argues, it is clear that he is not unequivocal in regard to the rationality of animals. What is critical here is the vocabulary that is used to make a statement such as *Aristotle does not believe that animals have reason*, or *Aristotle does not believe that animals have rational thought*. These statements employ the terms 'reason' and 'rational', but the important question is whether these words convey the same meaning as the terms used by Aristotle to describe what he believed animals lacked. This point is critical to Osborne's arguments, since Aristotle made the explicit statement that animals do not have reason. He said:

> *But belief is attended by conviction, for it is impossible to hold beliefs without being convinced of them: but no beast is ever convinced, though many have imagination. Further, every belief implies conviction, conviction implies that we have been persuaded, and persuasion implies reason. Among beasts, however, though some have imagination, none have reason.*[18]

Aristotle also claims that animals lack *nous*,[19] but this is taken by Osborne not to be lack of rationality, but instead lack of the capacity to think of a particular kind of 'abstract object'.[20] What this 'abstract object' is, Osborne does not clarify, and she is dangerously close here arguing that this is a lack of an ability for all perceptual thought., This may include some of the thought content which she later argues is made available to animals by *phantasia*.

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[17] Bermudez (2003: 4).

[18] Durrant (1993: 56); Aristotle, *De Anima* 3.3 428a19-25.

[19] Aristotle, *De Anima*, 3.4-7, cited in Osborne (2007: 64, n2).

[20] Osborne (2007: 64, n2).

Thus in order to salvage her later arguments in favour of *phantasia* being able to perform just such a function, Osborne's 'abstract object' must be carefully defined. I argue that such a definition can take place by utilisation of the proposed formulation, in that what Osborne means is *phantasmata* of abstract concepts. If animals do not have access to or do not think of abstract objects, when such abstract objects are only *phantasmata* of abstract concepts, but they can nevertheless think of *phantasmata* of objects and abstracts of objects, then Aristotle's assertion that animals lack *nous* (as the capacity to think of abstract concepts by *phantasia*) may be admitted without weakening the argument that they nevertheless think of objects and abstracts of objects by *phantasia*, and that these *phantasmata* and *noesis* allow rational decision making and initiation of action.

To reform the lack of *nous* in animals: if *nous* equates with an ability to make a *moral* choice, then animals possess *phantasia* but not *nous*, thereby accounting for observable differences in their behaviour and abilities, but still providing a continuity between man and animal. If so, lack of *nous* also does not equate to lack of reason, or rationality. And the corollary is that if *phantasia* is some type of rational process or reasoning mechanism for initiating purposive behaviour in animals, then any statement such as *Aristotle does not believe that animals have reason*, or *Aristotle does not believe that animals have rational thought* would be incorrect, which is the outcome Osborne seeks to achieve.

Also, if *nous* is moral choice, and *noesis* is intellectual discrimination, then an animal can have *phantasia* and *noesis*, but does not need *nous* to act rationally. Also, if *nous* is related only to morality, it is arguable that the concepts of morality would be thought of by means of *phantasmata* of abstract concepts employed by *phantasia bouleutike*, which has already been demonstrated not to be necessary for animal rationality, even if it has not been conceded that animals do not possess it.

In regard to linguistic ability, in order to prove that *phantasia* provides a basis for animal rationality, Osborne adroitly overcomes the argument that the absence of language is an indicator of the absence of reason, and is an absolute barrier to rationality in animals. This is achieved by arguing that, since language is only the *expression* of thought content by a verbal convention, which imperfectly communicates an independent thought-concept unit, the lack of language does not

necessarily imply lack of thought content. If this is correct, how else is the presence of thought content proven, and can it be shown that animals, even if they cannot express such thoughts through verbal communication as human do, also share the thought-concept packages that motivate speech in humans? Osborne labels these thought-concept packages as conceptual or propositional thinking, which later turn out to equate to *phantasia*.

Interestingly, Morell also quotes the findings of the Max Planck Institute for Evolutionary Anthropology which studied a particular canine and concluded that:

> *he could learn and remember words as quickly as a [human] toddler. Other scientists had shown that two–year old children, who acquire around ten new words a day, had an innate set of principles that guide this task. This ability is seen as one of the key building blocks in language acquisition. The Max Planck scientists suspect that the same principles guide [the canine's] word learning, and that the technique he uses for learning words is identical to that of humans.*[21]

I suggest that, whether this ability is understood or discussed using the terminology of Osborne's thought-concept packages, Aristotelian *phantasia*, or Morell's innate principle for word-concept acquisition, ultimately the argument is sustainable from any of the aforegoing that non-human animals have a mental/cognitive ability which allows a share in conceptual thinking and belief-desire complexes. On this level, animals can be understood as intentional systems, incorporating beliefs, desires, and a host of other intentional attitudes,[22] rather than being Cartesian mindless automata.

Nevertheless, the reluctance of science to let go of the traditional distinctive features of human mental abilities has been hardy; Morell lists the abilities which are supposedly indicative of higher mental faculties, all of which tend to pre-suppose a human-centric sphere of ownership. They are: good memory, a grasp of grammar and symbols, self-awareness, understanding others' motives, imitating others, and

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[21] Morell (2008: 48).

[22] Wedin (1998: 2).

being creative.[23] Perhaps as science progresses and more studies are conducted in a process unthinkable in Aristotle's time, it appears that these preconceived spheres of ownership must be reconsidered. As Morell says:

> *bit by bit, in ingenious experiments, researchers have documented these talents in other species, gradually chipping away at what we thought made human beings distinctive.*[24]

In regard to propositional thinking, Rees has set out a comprehensive analysis of the meanings and uses of the word 'imagination' in English usage, since this is the word which is regularly used to translate *phantasia*.[25] A primary distinction, Rees argues, is to be made between those uses of the word imagination which denote the occurrence of a mental image without any propositional content, and those which, appositely, denote the occurrence of a mental image which is propositional in character.

Before his examples are expounded, it is salutary to examine the idea of a mental image which is propositional in nature, and that which is not, in order to attempt to discern the crucial difference for which Rees argues. Bealer defines propositions as follows: (1) propositions are the primary bearers of such properties as necessity, possibility, impossibility, truth, and falsity; (2) they are mind-independent extra-

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[23] Morell (2008: 44-45). An experiment conducted by Pepperberg, documented in Morell, indicates the ability of a parrot to distinguish similar characteristics between different objects, as well as to differentiate between the self-same object. This ability tends to indicate the existence of an ability to conceptualise abstracts and to utilise the database of available abstracts against which to compare proper sensibles, and from this comparison to make judgements in regard to the manner or degree of difference or similarity perceived between the proper sensible and the conceptual abstract. In the documented experiment, Pepperberg presented the parrot with two items, namely a green key and green cup. When the parrot viewed the object, it was asked two questions. The first, "what is the same?" elicited the response "green"; the second question, "what is different?" elicited the response, "shape." Remarkably, the parrot had been provided with a vocabulary that was demonstrably utilized to express a cognitive conclusion, which is furthermore supportive of the animal ability to link a conceptual abstract with a representational marker, namely the conceptual abstract of green, with the word "green", and the conceptual abstract shape, with the word "shape."

[24] Morell (2008: 44).

[25] Rees (1971: 494-496).

linguistic abstract objects; (3) a belief state consists in a subject standing in the relation of believing to a proposition, and that proposition is the content of the belief (likewise for other intentional states-desire, decision, memory, etc.); (4) propositions are typically public: people commonly believe one and the same proposition and doing so is a prerequisite for successful communication; (5) propositions are what (literal utterances of declarative) sentences express or mean.[26]

Everson's explanation is helpful:

> T*o say that someone perceives something to be the case is to ascribe a propositional attitude to him, whereas to say that he sees some object is not.*[27]

The outcome of an investigation into whether animals have a share in conceptual or propositional thinking is an important one. As Osborne remarks:

> *if … non-human animals don't have access to concepts, then the human/non-human distinction turns out to import an epistemological and metaphysical dualism of the kind that is commonly attributed to Plato.*[28]

If animals do not possess concepts, she argues, then there is a world of the senses, in which animals live, and a world of concepts, in which humans live and which is only accessible to humans. If this is correct, then the Stoics are correct; and so, too, are the ethical consequences of such a conclusion.

However, Osborne[29] supposes that in order to bridge the divide between humans and animals, there must be some process of thought, in terms of which human and animal minds can think of objects but not necessarily abstract concepts.[30] In other

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[26] Bealer (1998: 1). Bealer identifies that there are problems with the definition of 'propositions', as well as whether propositions can be assigned any given value or function in the cognitive process; these difficulties stem from criticism from reductionists and other groups who have questioned the explanations of the operation of propositional thought in the traditional theories.

27 Everson (1999: 187).

[28] Osborne (2007: 71).

[29] Osborne (2007: 70–72).

[30] Even then, it is only a particular kind of abstract concept that is not necessary.

words, we need to go beyond a world in which the mind and senses only perceive what is physically capable of immediate perception, but not so far as to a paradigm that requires the animal mind to conceive of abstract[31] thought, or concepts.

Thoughts of concepts as the touchstone of rationality lead to the Platonic dualism, which, in turn, leads to the inevitable conclusion of a fundamental qualitative difference between man and animal. Osborne's examples are instructive: the kind of abstract concepts we do not need to require an animal mind to conceive are concepts such as the square root of two, or the ideal husband. Plato and Aristotle themselves may have used examples such as the concept of Justice, or the ideal citizen, or Knowledge.

Undoubtedly, humans can think in this way and it is supposed that animals cannot. Therefore, there again appears to be a qualitative difference between the human and animal mind, and, thus, if conceptual thinking implies thinking of this type of abstract concept, there may again be a categorical difference between the human and animal mind. But, Osborne argues, thoughts can also be of objects and not just concepts. Even the human mind works in this way, so that not all of our thoughts are about the square root of two, but can be about a motor car, item of clothing, or another person, all of which are physical objects tangible to the senses in the perceptible world. Thus, while a mind may think of something which is not immediately apparent or immediately perceivable to the sensory organs, that thought is not necessarily of a concept, but can be of an object which the mind has hitherto perceived sensorily.

This paradigm requires, so Osborne argues, a philosophical outlook which integrates the thoughts of mind with the content of the world as it is encountered in perceptual, or sensory, experience.[32] Aristotle, Osborne argues, conceived of *phantasia* as a way to understand both human and animal behaviour in terms of such a process, and

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[31] Whether this is correct will be investigated in more depth below, as Osborne does allow for a type of abstract thought in animals, in order to emphasize the continuity between man and animal allowed by *phantasia*.

[32] Osborne (2007: 72).

importantly, this ability to integrate mind content and world content is shared by humans and animals. *Phantasia*, for Osborne, equates to propositional thinking.

An analysis of the process of *phantasia* in Osborne's understanding of it implies that *phantasia* is a function of the mind which retains a database or catalogue of forms and objects, so that when a sense organ perceives a form or object, the sense organ is able to assign that form to a corresponding *phantasma* of which it has experience, which the sense organ can then name and to which the sense organ can attribute various characteristics.

Again, Byrnum would agree, since he says that "Aristotle does not assume that information comes in through the senses in a form that is propositional."[33] It is only through the functioning of *phantasia* that a propositional attitude is adopted towards the sensible object. But in Osborne's example above, there is also a more subtle nuance to the possibility of how *phantasia* may function. It is agreed that this would still be through and in the form of a sense organ[34] which catalogues conceivable and historically perceived forms and objects, but which retains an awareness of these forms and objects not only as concepts but as real, physical, tangible objects in the immediate environment. Thus, even if the object is no longer perceivable to the perceiving organ, *phantasia* allows for the sense organ to remain aware of it, and to recognise it again when the perceiving organ sees, hears or feels it again.

So, if an object is perceivable to the organ of perception which relates to sight – the eye – and then becomes physically unperceivable, by reason that night falls, or a light is turned out, *phantasia* retains awareness of that object in its spatial location and with its own set of characteristics, so that when the perceiving organ of seeing physically sees that form or object again, the awareness of the object spatially through *phantasia* provides continuity to the continued spatial location and existence of the object, despite the fact that it is not perceptible to any of the senses.

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[33] Byrnum (1993: 92).

[34] In the *De Anima*, *phantasia* appears to be a function or mechanism for object recognition and categorisation which appears to take place in the brain, or what Aristotle calls the sense organ. Thus, Osborne argues that just as much as a perceiving organ can be aware of an object, the sense organ can be aware of an object through *phantasia*.

Since the awareness of the object remains, but the object is not physically present or perceivable, is it correct to call the awareness an image? Sparshot and others, believing so, equate the *phantasmata* with an image and therefore they have used the word 'imagination' to denote the meaning of *phantasia*,[35] but whereas he means in this instance imagination in the sense of an 'ability or tendency to envisage things as other than what they are'[36] this is only half of the function conceived of by Aristotle, and it is actually that function of *phantasia* which occurs in humans only and which therefore would stress discontinuity between humans and animals.

It is the more basic and general meaning and function of *phantasia*, in the sense of an ability to think of forms and objects which are not present, which allows Osborne to argue that *phantasia* is the bridge between living in a world of objects, and living in a world of concepts of objects. For while it is recognised that *phantasia*, as argued above, is the capacity for the sense organ to be aware of forms and objects, these forms and objects are of two sorts, and it is here that it is necessary to investigate what Osborne means when she talks of concepts in the animal mind, since it is not immediately apparent what distinction she is attempting to create between concepts of objects and abstract concepts. As such, the types of *phantasma*ta set out below are proposed as the three types of *phantasma*ta available by means of *phantasia* generally. Where *phantasia aisthetike* and *bouleutike* apply in particular, or exclude a particular category, mention is made.

Phantasmata of individual objects: The first form of *phantasma* explained by *phantasia* is that of the concept of an individual object, which is the concept of those forms or objects historically perceived by the sense organs, any sounds, sights, smells, tastes, or feelings of touch which the perceiving organs have encountered and which have then imprinted *phantasmata* of such perception on the sense organ.

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[35] Sparshot (1990: 3).

[36] Sparshot (1990: 3). See Chapter 8 below, in which the neurons in the human and animal brain are indicated as the repository of the *phantasmata*.

The sense organ has then created a packet of *phantasmata* associated with the object, the totality of which forms its own *phantasma* of the object built up of such perception in its catalogue of perceived forms and objects, so that when the perceiving organ in the future encounters such form or object, the *phantasma* in the sense organ creates the continuity or link between the *phantasma* and the perceived form or object.

An example may be the *phantasma* for a particular dog which one knows, called Fido, which exists in the sense organ as a packet of associated *phantasmata*, which contain the *phantasmata* for how Fido looks, how Fido smells, what Fido sounds like when it barks or pants or cries, what Fido feels like to the touch. In this paradigm, the sense organ can think of and be aware of the *phantasma* of Fido the dog, which is a meaningful form or object which can be the focus of inclination by the will. This also means that when the sense organ sees, hears, feels or smells a object which equates to the Fido *phantasma*, the mind will recognise the perceived object as Fido, and, critically, not as some other dog. This then is the *phantasma* of the individual object.

Phantasmata of abstracts of objects: The second proposed type of *phantasma*ta relate to abstracts of objects. It is pertinent here to discuss abstracts of objects, since the example just given is apt to demonstrate the point. *Phantasia* can arguably account for abstract of objects, which is not an abstract concept such as the square root of two, but is an abstract of the type of concept of an object such as Fido the dog. Fido the dog is an individual object, a physical tangible entity which exists in the material world, which happens to be a dog. The *phantasma* of Fido does label him as a dog, but arguably this is less important than the label of 'Fido', which marks him as an individual object. But what of the concept of 'a dog', or just 'dog', which is an example of the type of abstract of an object referred to here.

In this conceptual form, a *phantasma* exists in which the possessor has a gestalt of what *a dog* looks like, what *a dog* sounds like, what *a dog* feels like to the touch, and what *a dog* smells like, and unfortunately what *a dog* tastes like if eaten. In this way, a *phantasma* exists of the generic or *abstract* of 'dog', which would explain when a dog is encountered that is not Fido, it is recognised as a dog, but not Fido, through the association with the abstract of the object 'dog'.

Osborne's arguments seem to lead to this conclusion, which allows for not only 'concepts' of objects, but also 'concepts' of abstracts of objects, as *phantasmata* in *phantasia*, in both human and animal thought. Admittedly, Osborne's work does not contain the terminology employed above in regard to abstracts of concepts, although it is arguable that she would not object to such a description of what is implied by her own examples. Also, Osborne's terminology of concepts is not particularly helpful and is often confusing when attempting to differentiate between concepts of objects and concepts of abstracts of objects. The terminology of *phantasmata* of objects and *phantasmata* of abstracts of objects is suggested as being more helpful, technical and precise.

Phantasmata of abstract concepts: As compared to *phantasmata* of abstracts of objects, abstract concepts are such things as the square root of two, the offside rule in football, and the perfect husband. Osborne herself uses some of these examples to explicate her category of concepts which she argues are not necessary for the inclusion of animals in *phantasia*, and the lack of which do not mean that animals do not share in propositional thought, or thoughts involving concepts.

Yet, Osborne is not wrong in her arguments about concepts, despite the precision of definition and necessity of divorce of *phantasmata* into concepts of objects and *phantasmata* of abstract concepts, since both of these *phantasmata* involve or are of 'concepts'. The proposed definition and the additional clarity obtained by the split mentioned above, support Osborne. Everson would appear to agree, since he says in the context of a discussion on icons, that:

> *In the case where the subject is aware of an icon which is not merely a picture but actually a likeness, his phantasia will itself be of the object which brings it about. Thus, in the case where the icon is just a picture of some boy or other, the subject will have a phantasia of a boy, but where it is a likeness of a particular boy, he will duly have a phantasia of that boy rather than of any other.*[37]

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[37] Everson (2009: 205).

Using the terminology I have suggested, in Everson's example if the *phantasia* of *a particular* boy is a *phantasia* of an individual object, and if the *phantasia* is of *a* boy, this is a *phantasia* of an abstract of an object. If this is correct, as Osborne argues, *phantasia* is how animal thinking can be linked with human thinking. In Osborne's own example, *phantasia* in this case exists in the cat which sits mewing at the door; for the reason that in the sense organ of the cat there is a *phantasma* of a discrete and particular form or object analogous to the human form or object of 'outside' or 'garden', which also has all of the cat's historical experience of that particular outside/garden loaded into it.

This - although Osborne does not use my proposed formulation - would appear to be the *phantasma* of the individual object of the garden; *this* garden, as opposed to the genus of landscapes which can be labelled as gardens. The outside/garden *phantasma* is, to the cat, not the abstract of the object 'outside/garden'; rather it is of a particular, defined location with all of the characteristics of that location imbedded in it; the tree in the corner of the garden with a bird feeder hanging from the lower branch; the white picket fence running along the perimeter; the rose bushes framing the garden path and the bird-bath sitting in the centre.

That is why, when the cat sits at the door, which is a form or object perceived by the cat's sense organs, it does so not with the hope that behind the door lies another experience or locality which is conceptual in the mind of the cat. When the door opens, the cat is not confounded by what is found, but instead it walks into a discrete and recognisable location held in the mind of the cat as a *phantasma*, which now merges with and accords with the location perceived by the variety of the cat's sense organs, which build up by sight, sound, smell, feel and taste, the *phantasma* of the individual object of outside/garden. Interestingly, Osborne also argues that *phantasmata* must be more than images, since perception can arise from any of the senses.

What is argued here is that a *phantasma* of any form or object will be a packet of perceptions, so that the *phantasma* of object x will be a combination of its sight, feel, taste, smell, and sound, or any other limited combination of these depending on the object. The solidity and reality of this *phantasma* in the sense organ of the animal also means that the animal is able to differentiate between changes that may have

taken place to the outside/garden in the interim period in which the cat was not physically present in the outside/garden. The function that is taking place when the animal now explores the outside/garden and perceives the differences is due to the sense organ which contains the *phantasma* of the outside/garden. The cat is now faced with the updated outside/garden, which is perceived by the totality of the perceiving organs, updating the *phantasma*.

Caston, it seems, would agree when he argues that a cat lying in wait for prey has the relevant *phantasmata* from experiences of sounds and glimpses of scurrying vermin in the past, to expect a moving, rodent looking object behind the bush.[38] Although he does not explicitly say so, it is arguable that Caston would not object to the use of the suggested terminology that this is the *phantasma* of the abstract of the object of prey, or rodent, which is being waited for, since it is not likely that the cat is hunting any particular mouse.

This, and the suggested terminology of the abstract of objects, would also explain why an animal can go in search of prey, when the prey is not immediately perceivable to the perceiving organs. If there was no presence of the awareness of a form or object, either of the individual object or of the abstract of objects which exist as a *phantasma* in the sense organ of the animal, the animal may act as a machine only,[39] with no bodily functions being initiated – such as the function to get up and hunt – until another animal became somehow perceptible, by sight, smell or sound, to the animal. But the lion, in such an example, has a *phantasma* of an abstract of the object analogous to an antelope, or any other typical type of prey hunted by the lion, and the lion's awareness of the abstract of these objects as something which can be hunted, makes the lion inclined to go and hunt it, thereby initiating motion and the action of hunting. Also, when the lion perceives potential prey, there must be some function which allows it to select one prey over another. When the lion is

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[38] Caston (1996: 291).

[39] Osborne analyses how Aristotle's treatment of *phantasia* allows for a paradigm in which animal behaviour is not machine-like, unlike in the Cartesian formulation. See Osborne (2007: 75-79). Aristotle notes differences between his automata, and the comparison between them and animals is only superficial.

faced with a herd of antelope, it may select the youngest, the oldest, the sickest or most feeble.

This is because, although each animal which forms part of the herd that is its potential prey exists as a discrete form or object to the lion's perceiving organs, there is also a corresponding *phantasma* for each type of animal. Accordingly, the lion's sense organ is aware of a *phantasma* of a sick or old buck, which *phantasma* has the associated characteristics of easy prey. Simultaneously, the lion's sense organ is aware of a *phantasma* of a male buck, with horns. This *phantasma* has the associated characteristics of danger, potential harm and injury to the lion.

If the sense organ did not contain these phantasms, allowing the forms and objects immediately perceived by the lion's perceiving organs to be sorted and selected from, the lion's choice of prey would not make sense, as all forms and objects perceivable to it would, in the absence of *phantasma* corresponding to each type of object, rank as equal prey.

Aristotle's own arguments support the conclusion of *phantasia* of abstracts of objects, and that such ability is present in animals also, since he seems to also argue that *phantasia* may allow for some form of conceptual thinking, since animals do not have *phantasia* of every single like object which they encounter, but they can nevertheless recognise abstracts, so that if an animal encounters a new other animal, it may never have experienced an animal of that type with that colour fur, size, or deformity, yet may nevertheless recognise that animal of the animal type.

This is crucial to Osborne as she argues that if *phantasia* in animals is only of phantasms of objects they have perceptually encountered before, then there is still a critical difference between humans which have intellect and animals which don't. Therefore, she argues for animal *phantasia* which allows for abstracts in the manner supposed above of the abstract of objects. This is where her earlier comments in regard to restrictions in animal *phantasia* to concepts must be clarified by the introduction of the idea of the abstract of objects as a type of concept which is different to a concept of pure abstract.

If this is how Aristotle would have argued, then a viable conclusion is that *phantasia* can account for both human and animal thought process, and is also not yet the divisive ability of imagination in the sense usually conceived of as the ability to think of abstracts (not the abstract of objects, but rather pure abstracts such as the offside rule in football, or Osborne's square root of two).

Osborne believes that Aristotle developed the concept of *phantasia* to develop a plausible account of animal behaviour that avoids some of the traps of Platonic thought that creates a discontinuity between man and animal and disallows animals a share in the idea that the content of thoughts is the content of the viewer's world, the same world as that perceived, and not a separate replica of it.[40] To this point, the arguments adduced by her appear plausible, particularly when clarified by the further specification of concepts into concepts of objects, concepts of abstracts of objects, and concepts of pure abstracts.

At this point, after explication of Osborne's thesis, an argument to consider is whether it is fact necessary for it to be proven that animals possess the capacity or the ability to think in terms of that type of concept of abstract objects which is supposedly reserved for humans only, what is termed in the proposed formulation above as concepts of pure abstracts. The reason why this question is important is: if it can be argued that animals possess abilities and capacities which are analogous to those human abilities and capacities which had previously been thought to be the touchstone of reason, and if those human abilities and capacities which had previously been argued to be such touchstones, are now found not to be necessary for the recognition of reason in non human animals, then the only characteristic, capacity or ability which is left on which to pin reason, is the ability to think in terms of that type of concept of abstract objects which seems to be reserved for humans only, and which animals do not seem to possess.

In other words, the only cause which we have left to deny reason and rationality in animals is for the inability which humans perceive in animals to be able to think of the square root of two, or the perfect wife. However, if this is truly the last bastion

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[40] Osborne (2007: 72).

of defence for supporters in the non-rational animal camp, then the strict requirement that the ability to think of these human types of abstract concepts is the hallmark of reason, may have consequences which would lead sections of humans to fall short of the basic requirement.

Moreover, not only would this argument predicate that lack of this quality renders any animal (whether human or non-human, without reason or irrational), but it also renders any other type of capacity or ability which hitherto had been recognised as being an indicator of reason, as no longer relevant. In other words, if it is only the ability to think of human types of abstract concepts that indicates reason, then the ability to think of concepts, as a general ability only, falls outside of the set of qualities necessary to indicate reason. Also, language is no longer necessary.[41] The end result is one in which the argument for rationality is demonstrably circular and is exclusionary so that one species and one species alone will ever qualify. The argument can be expressed as follows:

> ***Question****: What is required of an animal before it can be said to possess reason/rationality?*
> ***Answer****: The animal must possess the ability to think of abstract types of concepts which only a human can think of.*

The above structure, which is predicated on the 'last bastion' argument, in effect reduces the equation to a formula in terms of which rationality is determined by human ability, and therefore that since the ability is assumed to only ever be present in humans, that all humans are reasoned/rational and that all no-human animals are not. To put the structure bluntly, the answer to the question - *when is an animal rational, and what ability must it possess to be rational*, is – *when the animal is human and at no other times*. Reason and rationality, therefore, reduce to an exclusively human ability.

But clearly, this structure is no adequate answer, since it answers the question which relates to a psychological or mental ability by reference to a biological classification.

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[41] This, at least, is to be supported.

This is clearly unsatisfactory and fails to address the underlying question as to how reason is adjudged, and what determinants can objectively be used to determine the presence of reason/rationality which would allow no-human animals to be recognised to share in this ability.

CHAPTER SEVEN

PROPOSITIONAL THOUGHT AND NON-LINGUISTIC ANIMALS

Dennet neatly summarises the current trends in animal behavioural studies to approach the problem from a cognitivist, rather than a behaviourist, stance:

> *According to one more or less standard mythology, behaviourism, the ideology and methodology that reigned in experimental psychology for most of the century has been overthrown by a new ideology and methodology: cognitivism. Behaviourists, we are told, didn't take the mind seriously. They ignored or even denied the existence of mental states such as beliefs and desires, and mental processes such as imagination and reasoning … cognitivists, in contrast, take the mind seriously and develop theories models and explanations that invoke as real items, these internal mental goings on. People, (and at least some other animals) have minds after all: they are rational agents.*[1]

Cognitivists, therefore, attempt to explain animal behaviour in terms of mental processes which can include imagination, and which include rationality as explanators of behaviour. As Dennet says above, cognitivists develop theories to explain animal 'mental goings on', and Osborne's proposal of *phantasia* as a mental process which involves imagination, rationality, belief and desire, is one of these theories.

However, the ascendancy of cognitivist theories has not meant that all behaviourists have given up the fight. A response to the arguments of the cognitive ethologists is by means of Morgan's canon, which provides that "in no case may we interpret an animal activity to be interpreted in terms

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[1] Dennet (1998: 323).

of higher psychological processes if it can be fairly interpreted in terms of processes which stand lower in the scale of psychological evolution and development."[2] However, as Bermudez argues in counter-point to Morgan's canon, "explaining a behaviour in terms of belief and desires is frequently much simpler than explaining it as a result of a complex process of instrumental conditioning."[3] And certainly simpler than a complex process of stimulus-response, or innate releasing mechanisms.

Morgan's canon may be an explanator in some cases, but in particular where observation is carried out without knowledge of the animal observed, it is disingenuous to ascribe mimicry, cues or prompting as explanations which are preferable over explanations in terms of cognitive capacities, such as learned responses, goal-directed behaviour, or reasoned actions. The canon, says Wilder, must be revised to bring it up to date with the advances in understanding animal behaviour brought about by the research and conclusions of cognitive ethologists. The argument put forward in this work, that *phantasia* is a common human and animal ability which allows for the rational and ordered presentation of mental content in humans and animals, with a resultant selection of goal-oriented behaviour, would tend to support this conclusion.

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[2] Morgan, L. (1894) *An introduction to comparative Psychology.* In Bermudez (2003: 6). Although Morgan's work is from the last century, his statement, known as Morgan's canon, is still cited by comparative psychologists. As explained by Wilder, H. 'Interpretive Cognitive Ethology.' In Beckhoff (1996: 31), that where a non-cognitive factor (such as cueing and prompting) may explain what appears to be rational animal behavior, this explanation is to be preferred over any explanation that posits cognitive abilities. Also, if a lower order cognitive capacity (imitation) can serve as the explanation, this is preferable to an explanation in terms of a higher order cognitive ability (reasoned behavior). For animals, then, the presumption is that cognitive abilities do not exists, and the onus rests on all those in support to disprove this. The weight of overturning the burden of proof, and the collective history of the presumption thus weights heavy on the shoulders of the supporters, and is not an easy weight to discharge.

[3] Bermudez (2003: 6-7).

Wilder[4] raises the point that for some behaviourist researchers who argue that only humans have cognitive abilities and that animals do not, the two sets of human and language users are co-extensive, and that, again, the lack of language in animals is a fundamental barrier to cognitive ability. Wilder's response to such an approach is forceful, probably by virtue of its conviction which arises from extensive study; he says, in support of the discipline of cognitive ethology, that "the discipline is possible because it is actual."[5]

In general, arguments in favour of animal rationality, when not opposed on the basis of behaviourist theories or the generality of Morgan's canon, are objected to on the basis that attempts to explain animal behaviour by processes which are analogous to human processes, is merely anthropomorphizing the animal. Fisher sees anthropomorphism as a reaction to arguments for animal consciousness and analogues of human mental processes, but as a reaction which is not really well defined. The charge of anthropomorphism, Fisher says, "oversimplifies a complex issue – animal consciousness – and it tries to inhibit consideration of positions that ought to be evaluated in a more open minded and empirical manner."[6]

The basic underlying argument of anyone who claims that the attribution of human or human-like mental states to animal is anthropomorphism, is that human mental states are discernible through empirical study, and in particular through research and conclusions drawn and confirmed by the ability of human subjects to express in a linguistic manner the content of their thoughts in confirmation of empirical data, but that animal mental states are not because the linguistic confirmation is not available.

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[4] Wilder (1996: 30).

[5] Wilder (1996: 30).

[6] Fisher (1996: 3).

However, this avoids the possibility of other empirical means of confirmation of data; such as human and animal reaction to situations and manipulation of environment which indicates that an underlying mental process is at work which leads to the implementation of desired course of action. For example, if a human is presented with an object, the human can linguistically confirm that it understands the type and use of the object. Thus, there appears to be a mental process at work which leads to the understanding, which is then expressed or confirmed by linguistic affirmation.

The inability of the animal to provide the same linguistic affirmation should not, it is arguable, mean that (i) an analogous mental process is not at work in the animal, and (ii) the description of human states of mind is not appropriate to describe the animal. Thus, as Fisher argues, if empirical data can show animal consciousness which operates according to human models of mental processes, why not anthropomorphize?

The simple allegation of anthropomorphism is loaded and presupposes the answer before the investigation starts: the charge of anthropomorphism argues that it is not appropriate to describe an animal in terms of human characteristics[7] – when it comes to thinking of or describing animal mental states – because an animal is not human. Since an animal is not human, it does not have human attributes – even mental attributes – and therefore human descriptions are not apt.

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[7] Fisher explains that a lot of the arguments about anthropomorphism should turn on whether critics mean that it is wrong to view animals as having human characteristics, based on what is meant by "human characteristics." If it is meant by this that these characteristics are those that define the unique human nature, then Fisher would agree that it is wrong to view or describe animals in these terms. Fisher (1996: 4). If not, the objection seems less tenable.

This takes us back to the argument that there is an impeachable barrier between humans and animals, and tries to stop the investigation before it has even started. Nevertheless, even if purely for the reason that the complaint of anthropomorphism is so tenacious, rather than for reasons relating to the merits of this complaint, Allen and Hauser's[8] citation of Burghardt is probably correct, when he says that modern cognitive ethology must utilize a methodology that can avoid the charge of excessive anthropomorphism if is to successfully incorporate mentalistic descriptions.

For the purposes of this study, while the objection of anthropomorphism is tentatively addressed with the above argument, and while it is concluded that methodologically it does not make sense to entertain charges of anthropomorphism until the empirical data is analyzed to see if any mental characteristics of humans and animals are analogous, it is not being argued that humans and animals may share the same emotional states. This would appear to be the greatest and most critical objection lodged under the tenet of this argument: if observers ascribe a human mental state, such as happiness, regret, or love, to an animal, on what basis is that attribution made? Can humans really say for sure that an animal is in an emotional state, which is the same as a human emotional state?

While there are proposals that this is indeed the case,[9] for the purposes of this study, and in particular due to the arguments which have been made that mental processes are broadly analogous between humans and animals in regard to *phantasia*, but then that humans have an additional or enhanced ability in terms of which *phantasia* allows concepts of pure abstracts, such as the square root of two, this objection is allowable, but to a large extent, irrelevant. What is focused on here is whether animals have a mental process for dealing with perceptual content, and to act

[8] Allen and Hauser, 'Concept Attribution in Non-Human Animals: Theoretical and Methodological Problems in Ascribing Complex Mental Processes.' In Beckhoff (1996: 47).

[9] In terms of anecdotal evidence from cognitive ethologists.

thereon, which can be described in the terms Aristotle used to explain and understand that mental process in humans.

While the argument between behaviourists and cognitivists certainly bears direct relation to the thesis of *phantasia* as a cognitivist theory, it is sufficient for now to rely on the general acceptance that cognitivist theories are accepted as better explanators of animal behaviour and that behaviourist theories are discounted as insufficient to explain animal behaviour.

The problem faced by cognitive ethologists is to explain animal behaviour in terms of rational cognitive processes that do not rely on language as an external expression of internal rationality, but that allows animals to have access to concepts, or propositional thinking. Griffin quotes Terrace, in his discussion on the possibility of thinking without language, or words, where he says:

> *Now that there are strong grounds to dispute Descartes' contention that animals lack the ability to think, we have to ask just how animals do think.*[10]

Morell reiterates the problem:

> *How, then, does a scientist prove that an animal is capable of thinking – that it is able to acquire information about the world and act on it?'*[11]

Despite the fact that researchers such as Dennet are able to argue persuasively that some animals may have rudimentary language through vocalisation with different meanings which are universally recognisable to other animals of the same species or group,[12] which brings into question

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[10] Cited in Blakemore (1989: 135).

[11] Morell (2008: 42).

[12] Dennet (1998: 290). Dennet gives the example of vervet monkeys which vocalise distress calls, which are demonstrably different for different types of threats to the

the strict denial of language to non-human animals, this position is not required to defend animal rationality. Instead, the answer for *all* animals – not only those of the limited species which may vocalise - is potentially to be found in *phantasia*, which explains a cognitive process involving propositional thought in a belief-desire complex, by which a paradigm more extensively than a simple sensation – instinctive response is allowed and which recognises a shared ability of non-human animals to form and retain concepts of objects which can allow them to negotiate the sensory world.

Ostensibly, this question is answered on at least some levels, by *phantasia*. *Phantasia* is the means by which the world of the imagination mediates the world of the senses and allows human and non-human animals to act, on a cognitively open-outcome basis, in accordance with other cognitive processes, such as discrimination or thinking, as Aristotle would say, to determine the action to be taken.

Before the link between *phantasia* and rational thinking in animals can be made, and thus concluded that *phantasia* can be an explanator of non-linguistic or propositional thought, it is opportune to investigate current scholarly trends on non-linguistic thought. Bermudez has analysed two schools of thought which have developed theories about the study of thought in a linguistic context, and unsurprisingly, has found that both follow inappropriate methods for analysing the thoughts of non-linguistic animals.[13] First, the Fregean approach which stresses thoughts as the sense of sentences, is found by Bermudez to be "deeply problematic"[14] providing a framework within which the thought content of non-linguistic animals can be determined, since this approach assumes that the study of

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monkey troupe, such as snakes, eagles and leopards, each with different responses, such as checking the sky when the eagle alarm is heard.

[13] Bermudez (2003: 13-33).

[14] Bermudez (2003: 31).

thoughts can proceed only via the study of the sentences that express them.

Similarly, the second paradigm, which is that of Fodor's language of thought hypothesis,[15] is found to be more promising. But although it resolves some of the problems identified in the Fregean approach, it is still lacking both in that it presupposes a mechanism of belief-desire psychology, which Bermudez says is yet unsubstantiated in non-linguistic animals, and also because its arguments in regards to the mechanics of thinking simply do not address non-linguistic animals.[16]

The outcome of Bermudez's study is, as suggested above, no great surprise in the context of this analysis of the attribution of rationality to animals. It highlights the point made by Osborne that any study of animal rationality must proceed from the new paradigm, according to which language is not an exclusive indicator of thought or rationality, and methods must be found for determining cognition and rationality other than by the existing ones which rely on assessing thought content through linguistic content.

As Bermudez has shown, where language is not available, neither Frege's nor Fodor's hypotheses provide a framework within which non-human animal thought content can be determined. Bermudez's work on cognitive processes in animals supports the theory that animals may share in a cognitive process, which is similar to that utilised by human animals in the conceptualisation of non-present objects or abstract objects. [17] Whereas Bermudez does not equate this ability with *phantasia*,[18] the similarities

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[15] Bermudez (2003: 31).

[16] Bermudez (2003: 32).

[17] Bermudez (2003: 32).

[18] Bermudez is also hesitant to attribute propositional thought (in the manner of human propositional thought) to non-human animals. See Bermudez (2006: 299-316). Even

between Bermudez's paradigm and the paradigm of *phantasia* are important enough to justify superimposing the framework of *phantasia* onto his explanation.

Hauser supports the contention that language is not an appropriate determinant of thought, and that lack of language is not an indicator of lack of thought. In regard to the claim that animal thought is limited or non-existent because animals lack language, he notes that "this claim assumes that language is necessary for thought", and also that animals and adult humans are the most interesting, or appropriate groups to compare. Rather, Hauser counters, the most profitable comparative study for understanding animal thought is by a process of comparing animals and *infant* humans.[19]

What Hauser suggests is that human *infants* have a mental capacity, and mental tools, which are ascertainable by study and investigation, and that animal mental capacities and mental tools can similarly be studied. The point at which difference occurs, is when the minds of infants are transformed by the acquisition of language, a new tool.[20]

The implication and further extension of this argument is that language is not necessary for mental capacity and is merely a tool, or means for verbally expressing, through a linguistic pattern of socially understood constructs, the underlying mental concepts which occupy the mental

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so, he has to admit that reasoning does take in animals, even if such reasoning process is "fundamentally different from that of language using creatures" Bermudez (2006: 315.) Provided that this argument is admitted for content of thought but not for mechanism, Bermudez's comments are favourable towards Osborne's thesis.

[19] Hauser (2001: *xix)*. See also Verbeke's comments in which he indicates that ability is developed as a human ages; this is supportive of the contention that language is acquired by humans merely as a linguistic tool for the expression of thought content, and that pre-linguistic humans and animals should not be denied rational thought content on the mere inability to express such content in a linguistic manner.

[20] Hauser (2001: *xix)*.

capacity of the subject. Hauser seems to suggest that as the human infant obtains the means to communicate the content of his/her own mental capacity, this capacity may be fundamentally altered.

I argue that the only difference may be that the *addition* of a new mode of communication, verbal expression of mental content, and that the underlying mental patterns and content may remain unchanged. What is, perhaps, more pertinent to the study at hand is the question of the *content* of the mental capacity. I suggest that in animals and infant humans, the commonality resides in the *presentation* of mental content through *phantasma*ta, by *phantasia*; also that, as humans develop into language-capable adults, the *phantasmata* remain, but are now communicated generally through language structures, which, by definition and application of formal rules of grammar, syntax, and conventions of connotation and denotation, are restrictive and may hamper the understanding of the mental concepts/*phantasmata* that are sought to be described, communicated or verbalised by the application of words thereto.

In order to discern modes of thinking in non-linguistic animals, other than by means of hypotheses such as Frege's and Fodor's which are relevant only to linguistic creatures, Bermudez sets up a number of alternative hypotheses of non-linguistic thought. The first one is Dummet's hypothesis of 'non-linguistic protothoughts.'[21] This is, perhaps, an unfortunate label, since the connotation of this neologism is that the thought is not fully formed, or not the same type of thought which a human, linguistic creature is capable of conceiving.

While Dummet would seem to argue that this is, indeed, the nature of a protothought regrettably he has not fully investigated the possibility of the protothought thesis as an explanator of non-human, non-linguistic thought

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[21] Bermudez (2003: 42-44), citing Dummet (1993: 123).

processes as being analogous to and no less sophisticated than the cognitive processes of linguistic creatures. The possibility of this extension, and in particular the extension of this hypothesis into the *phantasia* paradigm, emerges from Dummet's explicit statement that, according to his thesis, non-linguistic creatures can form protothoughts which are "spatial images superimposed on spatial perceptions." Commenting on this, Bermudez notes:

> *According to Michael Dummett, the types of thinking available to animals are just a subset of the central types of thinking available to language-using creatures. Dummett accepts that there can be non-linguistic thoughts, which can be had both by animals and by language-using creatures, but he calls them "proto-houghts". These proto-thoughts "do not have the structure of verbally expressed thoughts"; they are not "full-fledged thoughts"; they "cannot float free [of the environment], but can occur only as integrated with current activity"; and the vehicle of non- linguistic thought is "spatial images superimposed on spatial perceptions". There can be non-linguistic thoughts, but these are not "accurately expressible in language". This is what I call the minimalist conception of non-linguistic thought.*[22]

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[22] Bermudez, J.L. 'Thinking without words: an overview for animal ethics.' http://www.artsci.wustl.edu/~jlbermud/jethics.pdf, citing Dummet (1993:123).

As is evident from my proposed formulation, Dummet's observation may be regarded as a restatement of what I have argued to be one of the functions of *phantasia,* in the superimposition of *phantasmata* (as pre-existing spatial images) onto a landscape of proper sensibles (the spatially perceived environment). Dummet's thesis may be said to support and to be complementary to Osborne's paradigm of animal *phantasia*, as modified in my proposed formulation.

In further agreement with this contention, Dummet argues that the protothought thesis explains animal behaviour in terms of a sophisticated cognitive process, in which action is stimulated, not by a mere stimulus-response, or innate releasing mechanism, or mechanistic alternative,[23] but by a series of mental images, which an animal accesses in order to adapt its behaviour to its perceived environment and to exercise judgement in relation to it.

But, Dummet does not venture into extending the application of protothoughts to the full paradigm, as Osborne would demand. This reluctance is due to the fact that Dummet accords a limited scope to the protothought thesis, by arguing that it explains only a non-linguistic creature's response to its immediate environment. As Bermudez notes, Dummet has allowed the protothoughts of non-linguistic creatures "a very circumscribed applicability",[24] due to his view that protothoughts "can only occur as integrated with current activity."[25] Dummet, nevertheless, draws an *explicit* connection between non-linguistic protothought and a type of thinking involved in skilled behaviour in humans. As an example, he observes that:

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[23] See Franklin's exposition of and argument against Griffin's mechanistic alternative, in terms of which Griffin argues for a mechanistic response system where genetic instructions are conveyed by DNA; cited in Franklin (1995:45-47).

[24] Bermudez (2003: 42).

[25] Bermudez (2003: 42).

> *A car driver or canoeist may have to rapidly estimate the speed and direction of oncoming cars or boats and their probable trajectory, consider what avoiding action to take, and so on; it is natural to say that he is engaged in highly concentrated thought. But the vehicle of such thoughts is certainly not language: it should be said, I think, to consist in visual imagination superimposed on the visually perceived scene. It is not just that these thoughts are not framed in words: it is that they do not have the structure of verbally expressed thoughts. But they deserve the name of "protothoughts" because, while it would be ponderous to speak of truth or falsity in application to them, they are intrinsically connected with the possibility of their being mistaken: judgement, in a non-technical sense, is just what the driver and the canoeist need to exercise.*[26]

Although the protothought thesis allows the possibility of thought and conceptualisation to animals, the limitation imposed on it by Dummet, namely that these thoughts can be formed only in response to a perceived environment means that animals are viewed as automata, which can respond only when a certain stimulus is present in their perceived environment. Therefore, a cat should not move or act at all until a mouse passes in front of it, thereby spurring it to attempt to catch it.

The animal is seen as a *passive* entity, which responds only to certain stimuli and cannot meaningfully *initiate* action to fulfil its desires, until its sensory organs are stirred. This limitation is no supported by research into animal behaviour, and is demonstrably incorrect. However, if Dummet were to concede that protothoughts may find application in a mental environment, this limitation would be removed. Apart from the criticism that Dummet does not allow the application of protothoughts to extend to non-immediate environment and non-current activity in a mental

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[26] Dummet (1993: 122), cited in Bermudez (2003: 43).

environment, I suggest that his thesis of protothoughts, otherwise converges with Osborne's conception of *phantasia.*

If Dummet is reluctant to extend the application of protothoughts, Cussin - who agrees that an organism's ability to act on the perceived environment may be explained by Dummet's thesis - is willing to venture further in his theory of cognitive trails, in that he states that what an organism perceives, or the content of its perception, is:

> *a distal environment structured in terms of the possibilities it affords for action*.[27]

Bermudez explains that Cussin's thesis of cognitive trails means that the environment of the protothinker is composed of superimposed features and affordances organized in terms of the protothinker's pragmatic understanding of the environment.[28]

To sum up, Bernudez, Dummet and Cussin have espoused hypothetical modes of cognition, which account for a *rational* process of thought in non-linguistic creatures which is analogous to and at times[29] shared with, the modes of cognition discerned in linguistic creatures. Dummet, however, limits his protothoughts, application only to immediate perceived environments. Cussin's argument comes closest to Osborne's paradigm of animal access to concepts and propositional thought in a mental environment, or Walker's paradigm of thought in terms of mental dispositions, images, intentions or anticipations.[30]

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[27] Cussin (1990: 655), cited in Bermudez (2003: 44).

[28] Bermudez (2003: 45).

[29] See Dummet, who argues that the protothought as a type of skilled behavioural thinking in humans is the same as the type of behavioural thinking in animals. Dummet (1993: 122), cited in Bermudez (2003: 43).

[30] Walker (1983: 382).

None of these scholars, however, has invoked a connection with Aristotelian concepts of either human or animal modes of cognition through *phantasia.* Bermudez' arguments for non-linguistic cognitive protothoughts, or Cussin's arguments for cognitive trails, are not framed with reference to the Aristotelian conception of *phantasia* nor the extension of *phantasia* to animals as argued by Osborne and others for the sake of a common cognitive process; nevertheless the latter paradigms support or form a complementary framework for these theses. Nevertheless, an analysis of Osbornian *phantasia* as a common cognitive process, and of the hypotheses of scholars such as Bermudez, Dummet and Cussin, who argue for higher level, rational cognitive process in non-human, non-linguistic animals and discount the claim that animal behaviour is simply the outcome of innate releasing mechanisms or instinctive responses, indicates a high level of similarity between the two conceptual frameworks.

Allen and Hauser have been concerned with investigating whether animals possess concepts, in particular in their contribution in Beckoff and Jamieson;[31] and in doing so, have embarked on a valuable discourse on what is meant by the "concept of concept".[32] The concept of concept is crucial to the purposes of this study, and, in particular, to the argument I put forward in my thesis that *phantasia* is a mental process, by which perceptive and external content is stored and presented internally to animals (human and non-human), and that *phantasmata* are the images, laden with content specific to the individual, that form the mental landscapes that allow an individual to interpret the external world.

I argue that it can be shown that modern cognitive ethologists are willing to ascribe an ability to non-human animals to form concepts, described in a form and with a function analogous to the understanding of Aristotle's

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[31] Allen (1996: Chapter 3).

[32] Allen (1996: 49–52).

phantasia as set out in this thesis, then a strong link may be demonstrated to exist between the two. Beyond this, Aristotelian recognition of *phantasia* in animals could be acknowledged as a precursor of modern cognitive ethology.

What do cognitive ethologists conceive of as 'concept', in regard to animals? Allen and Hauser cite Cooper: "Internal representations are a unifying theme in the different disciplines making up cognitive science."[33] This introductory statement opens the way for the discussion, by raising two points: first that cognitive science is a science which can be applied to both animals and humans; secondly, that mental processes seem to require, as a bare minimum, a level of internal representation to the individual which forms the underlying basis of other mental processes. What is the function of, and what is meant by, an 'internal representation'?

Cooper explains that cognitive science aims to determine the content, structure and organisation of knowledge, and this, she argues, equates to the *internal representations of the external world*.[34] Allen and Hauser take the argument further with the statement that an internal representation seems closely related to the notion of abstract idea. While the examples which they cite are focused on Locke and Hume, it is arguable that an internal representation is not necessarily always an abstract idea; alternatively, it must be decided what is meant by 'abstract idea' before drawing such a conclusion.

If an abstract idea connotes a pure abstract such as the square root of two, or a horse possessing the properties common to all horses, but without equation to a known horse, then arguably what is taken to be an internal representation in the context of animal *phantasia*, is not an abstract idea.

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[33] Allen (1996: 50).

[34] Cooper, L.A. 'Internal Representation.' In Griffin , D.R. (1982) *Animal Mind: Human Mind.* Berlin: Springer Verlag (1982: 145); cited by Allen (1996: 50).

However, if 'abstract idea' may be taken to mean nothing more than a *phantasma* of a present or non-present object, existing in the mental content of the individual, then this argument is to be supported. Semantic precision becomes crucial. On the latter formulation, the concept of abstract ideas being equated with internal representations in the context of animal *phantasia* is acceptable; on the former, it represents a barrier to allowing this ability to animals.

But what really turns on the equation? Is it necessary to say that an internal representation, as Cooper argues, must be an abstract idea? Is it not sufficient to state that cognitive science seeks to find evidence of a mental process by which the external world is presented to the individual, and thereby investigated by internal representations? This, I argue, is sufficient in order to counter behaviourist claims and to frame an argument that this mental process is aptly described by Aristotle's concept of *phantasia*.

What is very interesting in Allen's and Hauser's thesis is that a *direct* comparison is made between the ability to acquire concepts, and to use concepts to make sense of or to navigate the external world, by a process of deliberative decision-making and goal-oriented behaviour, and the goals of computer science.[35] That is, that "the search for representations with suitable structures is a primary goal for researchers in acquisition of concepts by computers."[36]

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[35] Dennet also argues that an understanding of the acquisition of concepts in animals and their use of such concepts to navigate the sensible world may be useful in the study of artificial or computer intelligence. Dennet (1998: 307). See also Dennet (1998: Chapter 1: *Can Machines Think?).*

[36] Allen (1996: 50); citing, Schank, R.C., Collins, G.C. and Hunter, L.E. "Transcending Inductive Category Formation in Learning." *Behavioral and Brain Sciences,* 9, (1986: 639-686).

This leads not only to the application of computer terminology, but also to suggest that it is appropriate to describe *phantasia* in terms of the hardware of a computer system, which would allow the system to receive input about the external world from various sources and therefrom to compile a list or database of encountered objects. Such a 'database' would imbed information gleaned from all sources about the objects, such as, without limitation, physical appearance, use, origin, taste, durability, mass, or any other pertinent information, which would allow the hardware first to recognise future objects encountered in the physical world, as objects already located within the database, and, secondly, to react appropriately to the object once encountered, or to direct behaviour towards acquiring or avoiding the object.

Wedin would seem to agree; in his discussion of cognition in general, he refers to the cognitive process of facial recognition as being broken down into 'subroutines', which form part of a larger "system description capable of direct realization in some kind of hardware."[37] Since *phantasia* is argued here to be a common human and animal capability, the attribution of computing terminology is appropriate to an understanding of the process in general, irrespective of whether it is applied to animals or humans.

Allen and Hauser justifiably warn of the dangers of attributing the full range of mental processes to animals (human and non-human), simply because of an apparent ability to have representations, and give the following example:

> *It is possible to teach a human being to sort distributors from other car part engines based on a family resemblance between shapes of distributors. But this ability would not be sufficient to want to say that the person has the concept of a distributor. In a suitably constrained environment, such a person need not have a*

[37] Wedin (1998: 2).

> *representation of any information other than the shape of a thing to accomplish the sorting.*[38]

Nevertheless, the mere fact that such a constrained example can be thought of, does not mean that animals' representations of objects are similarly constrained, and where animals' purposive behaviour in regards to objects is clearly goal-oriented, it would appear that the representation contains sufficient imbedded information to enable it to contribute meaningfully towards an animal's understanding of the purpose of the object. The fact that a seed is not as complex an object as a distributor does not mean that when a bird searches for seeds, it does not do so with the representation of the seed in its mental content, allowing it to recognise a seed when it comes across it, and know that a seed is a desirable object to seek and eat since it serves the purpose of satiating hunger.

Even Allen and Hauser recognise that studies of animals have proven that there is a hierarchy of abilities and, that, accordingly an argument may be made that certain animals possess what appear to be mental processes analogous to human mental processes, whereas others do not. In support, they cite that non-human primates' abilities make them obvious candidates for research into mental processes, and make primates a more apt genus for the application of anthropomorphic terminology, as compared to, for example, birds.[39]

Thus, in much the same way as Aristotle was able to say that some animals have *phantasia* and others do not, contemporary researchers in cognitive ethology conclude that some animals more obviously possess mental processes and others do not. Again, both contemporary

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[38] Allen (1996: 51).

[39] Allen (1996: 48-49).

researchers and Aristotle are unable to state with precision where the line ought to be drawn, and which animals mark the point in the scale at which the ability is no longer present. In any event, both scholars have agreed that, at the upper end of the scale, the ability is present.[40]

I have argued that the rendering of cognitive ethologists' hypotheses of non-linguistic thought processes, where they fit into the paradigm of a behaviour predicated on the superimposition of propositional thought and concepts upon mental and perceptual scenes, into the language of Aristotelian *phantasia,* would not be objectionable or incorrect. The explication of animal behaviour along the lines of such cognitive ethology theories but using the language of Aristotle and the concepts of *phantasmata,* in the place of visual imagination or superimposed features, would logically follow.

Further, I have suggested that Osborne's analysis of *phantasia*, modified by my proposed formulation, as a common feature of animal and human cognitive processes, and explanator of animal behaviour, is broadly in keeping with current theories of cognitive ethology. I have concluded that Osborne's argument, although based in Aristotelian terminology and explicated within the framework of his structure of *phantasia*, offers a competent and viable framework for the modern animal behavioural analyst or cognitive ethologist.

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[40] Allen (1996: 48-49).

CHAPTER EIGHT

PROPOSITIONAL THOUGHT AS *PHANTASIA*

Though animals are not linguistic, which is not in dispute, nevertheless the content of their thoughts can still be termed propositional. All animals, argues Hauser, possess a mental tool which enables them to recognise others, distinguish males from females, young from old, and kin from non-kin.[1] What is evident here is that cognitive ethologists and researchers, such as Hauser, have identified an ability in animals to perform such discriminatory functions, and call it simply an in-nominate 'mental tool.'

For their purposes, the naming of the mental tool is not important; the point of interest is that it exists and that, for this reason, animal minds may be considered, to an extent, analogous to human minds. For the purposes of my study, the identification of this mental tool is critical, and particularly the fact that the mental tool has been observed to function in this discriminatory manner.

The importance of this point to my argument that Hauser's in-nominate mental tool is in fact the Aristotelian ability of *phantasia* is clear. The persuasiveness of my argument, must rest, to a large extent, in the fact that Hauser stresses that animals possess a mental capability which enables them to distinguish and discriminate between sensible objects, and thus to modify their behaviour in accordance with their assessment of the characteristics of the sensible object.

For example, a male animal which perceives another animal - a female of the species -recognises it as such and believes that a particular mode of behaviour is appropriate in regard to the female. The very same mode of

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[1] Hauser (2001: 138).

behaviour, such as courtship display, is, conversely, not appropriate if applied to a male of the species. Similarly, protection of the young of the species, predation of prey species, flight responses to predatory species, all of which actions are appropriate to the discriminated classes of sensible objects perceived.

In this paradigm, the function of 'recognition'[2] is performed by *phantasia* and the allocation of a *phantasma* to the perceived sensible object. Therefore, *phantasia* is the explanator ability, in terms of which the mental landscape of the animal is formed. Sensible objects are measured against pre-existing *phantasmata,* so that the appropriate behaviour can be selected on the basis of the belief-desire complex, which of necessity requires *propositional thought*.

The alpha male of a particular pride of lion, perceiving a male intruder in his territory, believes that the intruder is not part of his pride, and also that, in order to prevent being deposed as the leader of the pride, he must drive the other lion from his territory. Believing all of these things, which are presented through *phantasia*, the lion elects either to fight with or submit to the intruder.

Even Frey, who denies the belief-desire complex to animals on the basis of their lack of linguistic ability, may have to concede that the belief-desire complex must exist in animals, even though it is not expressed linguistically. As Frey himself said: 'if what is believed is that a certain sentence is true,' then and only then can propositional thought as belief drive desire. But, Franklin retorts, belief is not needed only for occasions such as those cited by Frey – a rare book collector desiring an original

[2] As used in a sentence such as 'an animal which perceives another animal, which is a female of the species, recognises it as such'.

Gutenberg bible, because he believes that his collection does not yet contain one.[3]

Instead, beliefs and desires of humans and animals can be simpler. A human can desire an ice-cream cone on the belief that there is one to be had; a dog can desire her evening meal on the belief that she is lacking it. To support Frey's argument, Franklin notes one has to accept as beliefs only those which animals do not appear to have, and discount those which they do appear to have. If having a belief equates to propositional thought, then since animals have such beliefs, as expressed by their behaviour rather than linguistically, therefore they have propositional thought. The content of the propositions - the concepts – for both animals and humans, are those embodied in Aristotelian *phantasmata*.

However, if the cognitive processes are analogous, the question may be asked why animals and humans respond differently to the same sensible environment. The question presupposes, however, that human rationality is the only type of rationality that is recognised as such; even then, the variety and individuality of *human* responses to the same environment counters the argument that there can only be one set of responses to a given sensible environment, which qualifies as rational.

Furthermore, an explanation for differences between human and animal *phantasmata* of the same sensible object, is given by Hauser who quotes the cognitive scientist Paul Bloom.[4] Bloom argued that 'having a representation of an artefact requires an understanding of what the object was designed for.'[5] Hauser expands on this argument by employing the example of a carburettor, which he gives evidence as to having been studied intently by a vervet monkey, during an experiment he conducted.

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[3] Franklin (2005: 118-119).

[4] Hauser (2001: 50).

[5] Hauser (2001: 50), citing Bloom.

The perception of the carburettor, as a sensible object, did not result in the vervet monkey having any appreciation of the function of this object and the monkey's fascination with the object did not, as Hauser says, result in a mechanics degree. The pertinent question is: why did the vervet monkey's mental image of the sensible object (carburettor) not inform it that the object was an engine part, designed to combine the right mixture of air and fuel? The answer appears to lie in Bloom's thesis.

Since the monkey has no understanding of the function, use or context of the object, the mental image of the carburettor present in the monkey's mind contains no information other than that the object has been encountered before. It is then up to the function of memory to enable the monkey to remember the mental image, if it ever encounters this particular sensible object in future. If so, it is likely that the monkey's mind would do no more than recall that it had previously encountered such an object, but would not provide the monkey with any further information in regard to the sensed object.

On the other hand, a human being, faced with a sensible object, carburettor φ, can be told of its function, use, and context. At the same time as the sensible object carburettor φ is transformed into a mental image, the understanding of its use, function, and larger context, is included or encoded into the mental image. The mental image, or *phantasma*, is then created of the particular carburettor φ, as well as of the general abstract carburettor.

That these two *phantasmata* are created must be correct, for not only will the human being, who has experienced the sensible object (carburettor φ) be able to recognise the sensible object (carburettor φ) as the carburettor which is damaged, old, of a particular colour, or any other set of attributes pertaining to *that* specific carburettor, the human will also be able to extract a *generalisation* of carburettor, so that when a carburettor β, other than the sensible object, carburettor φ is sensed, the human being can

recognise that the sensible object β belongs to the general class, which it recognised as carburettor, but which is not carburettor φ.

Bloom provides confirmation that when a human child is presented with an unknown object, she will – more than likely – ask the question, 'what is this for?'[6] The reason for the question is to enable the information content obtained to be encoded within the basic *phantasma* which is created.

If this paradigm is explored, human and animal are really in the same position and the only difference between them is the human ability *to transmit information, through language*. There may be humans, who, if presented with a carburettor, are not able to discern its functions, use or context, or to even recognise it as a carburettor, if this information is not supplied to them via external means.[7] As Hauser (2001:51) states:

> *If understanding the intentional history of an artefact is critical to creating the representation, then unless an animal witnesses the invention, it presumably has no hope of acquiring the representation. The same holds true for an adult human.*[8]

Everson (2009: 187) gives a useful example:

> *Although it would seem to be a precondition of a perceiver's perceiving that* Fa*, or even of its merely appearing to him that* Fa*,*

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[6] Hauser (2001: 51).

[7] Through, for example, another human with existing knowledge or information about the carburetor, or other means of acquiring the information, such as books or other instructional media. Absent these means of acquiring this information, the human is arguably the same position as the animal.

[8] This presupposes that the animal would be able to understand the components or context in which the invention takes place to create the object, all of which presuppose that the information history of each such component is available to the animal, which generates into a *regressus ad infinitum*. As soon as one component is not understood, the ability to understand the invented object is called into question. This argument applies equally to animal and human.

> *that he should be able both to grasp the thought that* Fa *and to recognize perceptually that* Fa*, it is less certain that parallel constraints apply in the case where we say of someone simply that he perceives something. I cannot see that there is a word-processor in front of me unless I know what word-processors are and can recognize them when I see them, but I might still have seen a word-processor before I knew what such a thing is.*[9]

This is supported by a practical explanation. If an ancient Roman or Greek were to be presented with a modern computer or cell-phone, or if a contemporary human were to be presented with some unknown piece of future technology, neither would have the means of analysing its function or use, employing the technology at their respective disposals. Thus, although the ancient Roman or Greek may in future be able to recognise a computer as that 'strange object which they have seen before and of whose function or use they have no idea', or the contemporary human would recognise the future item in similar terms, neither would be closer to an understanding of function or use or context.

The animal faced with the same objects is in the same position. The animal, then, faced with objects explicable to humans in terms of the human *phantasmata*, should not be argued to lack mental capabilities simply because the failure to convey the informational content has led to the creation of what can neologistically be referred to as a 'flat *phantasma';* a *phantasma* which is no more than a mental image of the sensible object, carrying no information as to use, function or context.

The answer as to differences between animal and human abilities, in regard to sensible objects, may therefore lie, not in a disparity in mental ability, as much as in the need to fill an animal's flat *phantasmata* with the

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[9] Everson (2009: 187).

informational content that would enable the animal to approach sensible objects in the purposive manner that humans are able to adopt.

This explanation is alluded to by Beckoff, when he remarks that animals live in a very different sensory world from humans. Animals, Beckoff explains, 'hear things we can't and smell things we are glad we can't. They inhale deeply and exhale and snort vigorously, sorting a symphony of odours through keenly evolved noses that provide them with important information.'[10] Certain animals may also lack some of the senses which humans possess, or may have the same, but in varying degrees, such as animals which do have eyesight, but lack depth perception ability or colour sensitivity.

Other animals may be able to hear ultrasonic frequencies, which the human ear cannot capture, or see variations in the light spectrum, which the human eye cannot perceive. Therefore, it is to be expected that, even though *phantasia* may be common to both species, insofar as it is a shared ability to generate and store mental images, the sensory abilities, which produce different sensory experiences of the same proper sensible, may generate different *phantasmata*, and, accordingly, that the *phantasmata* will have different types and values of information imbedded therein.

As an example, a proper sensible, which is perceived by a human and animal contemporaneously, will generate a *phantasma* in the mental information stock of the human, which may contain some of the features which make up the animal *phantasma*, but, whereas the human *phantasma* may connote use or function in a human context, the animal *phantasma* will perforce contain connotations which imbed animal use or function.

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[10] Beckoff (2007: 41).

A human, perceiving a certain flower, on the basis of visual similarities between the proper sensible and the pre-existing corresponding *phantasma*, may recognise the object as a flower of the tulip type and, within that recognition act on the basis of the imbedded information which the mental image of the tulip type flower presents to the human, namely to believe that the flower possesses only decorative or aesthetic functions. The human, accordingly, bases its actions in regard to the tulip type flower, guided by its need or desire to utilise the flower for decorative or aesthetic purposes.

The honey-bee, on the other hand, may perceive the shape of the tulip-type flower in the same way as the human does, but sees it through a different colour spectrum, and may experience it by taste or touch in a manner which would be unfamiliar to a human (due to differences in the type and sensitivity of the sensory organs). Also, the recognition by the honey-bee of the tulip-type flower presents to its mind the *phantasma* which contains the imbedded information that pollen can be obtained from the flower, and that the flower is therefore a food source.

The flower's value as a food source, in comparison to other types of flowers which may be perceived at the same time, or which the honey-bee knows are available even if not immediately sensible, will be adjudged against pre-existing *phantasma*ta of other flowers as food sources. So what is common to the human and the animal are two things: the ability to perceive a proper sensible through sensory organs;, and *phantasia* to present mental images to the mind of both human and animal, which allow it to respond to the sensible world, by filtering sensory impressions through the stock of existing mental images. These images, in turn, enable both human and animal, within the parameters of their own unique types of informational content (generated by varyingly different abilities of sensation) to make sense of the world around them.

As Allen and Hauser confirm, even individual humans may perceive environmental features in different ways, and the question arises whether

animals do likewise.[11] Dennet agrees, and has argued for significant differences in the way in which humans and animals respond to sensible environment,[12] such as his example of vultures at a carcass, where clearly the vultures do not share human olfactory sensibilities or our sense of revulsion at the smell of carcasses. He provides another example where he says:

> *we do not worry about the seal pups on their ice floe, chilling their little flippers. We would be in agony, lying naked on the ice with the wind blowing over us, but they are designed for the cold.*[13]

The fact that there are, undeniably, different responses to the environment, due to different physical qualities and abilities, does not mean that underlying mental processes employed by humans and animals cannot be analogous. A human's *phantasia* leads to a rational action, such as to escape from inhospitable environments and to seek shelter and warmth, based on a rational apprehension of harm if these goals are not achieved, whereas a seal pup's *phantasia* leads to a rational action to endure the cold environment, on a rational apprehension that it is not harmful, again on the basis of the rational belief-desire complex.

It is in this sphere of investigation that behavioural studies of animals, when approached from the paradigm that non-humans share in *phantasia* as an ability and possess corresponding *phantasma*ta which allow them information content to react rationally to their sensible environment, are particularly helpful and supportive of the validity of my proposal. However, as pointed out above, cognitive ethologists do not utilise the *phantasia* paradigm as an explanator; their failure to do so does not mean that the information collected by them does not support and fit the hypothesis.

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[11] Allen (1996: 51).

[12] Dennet (1998: 341-342).

[13] Dennet (1998: 341-342).

Two examples may be cited, the first of which is a paradigmatic statement and the second an instance of behaviour explicable by the *phantasia* paradigm I propose. For the paradigmatic statement, Allen and Hauser sum up their study of animal concepts employing terminology which is not unfamiliar to the framing of *phantasia* in terms of my thesis. [14] It is useful to note that they have raised, at the same time, the Platonic caveat of *phantasia* in regards to error. They note:

> *Concepts [in animals] are capable of explaining complex abilities to generalise over variably stimuli, to rapidly produce appropriate responses to the common features underlying those stimuli, and to modify behaviour when it is discovered that perceptual stimuli are unreliable guides to perceptual features.*[15]

In further support, and with reference to behavioural modalities, Griffin cites an example of animal behaviour which he does not intend to be anything more than anecdotal evidence of animal ingenuity, but which can be applied to the issue at hand, as evidence of an underlying acceptance of the mental structure of animals accountable in terms of Aristotelian *phantasia*. The example is this: [16] a hungry chimpanzee walking through a native rain forest in the Ivory Coast comes across a large *panda oleosa* nut lying on the ground. The chimpanzee knows the nut is much too hard to open with his hands or teeth, and that the only way this nut can be cracked open is by pounding it with a very hard piece of rock.

Whereas Griffin goes on to question whether this example of animal ingenuity equates to cognition, I argue that this example may be used to show that the chimpanzee possesses *phantasia*. P*hantasia* and the mental *phantasmata* which are explained to shape the informational content of

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[14] Allen (1996: 59).

[15] Allen (1996:59).

[16] Griffin (1982: 1), cited by Allen (1996: 50).

animal minds in this paradigm, provide a plausible explanation as to how the chimpanzee recognises the nut as a *panda oleosa* nut, and at the same time appreciates, without having to attempt to crack the nut and fail, that the only way it can be opened is with a hard piece of rock.

When the chimpanzee perceives the physical sensible object of the nut through its sensory organs, the *phantasma* of the *panda oleosa* nut which exists in the mind of the animal, enables the chimpanzee to recognise the sensible object in its perceptive field as a *panda oleosa* nut. The *phantasma* of the *panda oleosa* nut in the mind of the chimpanzee is an enriched *phantasma* which contains informational content accreted into it by experience with all *panda oleosa* nuts encountered before, cracked, failed to crack, or eaten in the animal's lifespan; the chimpanzee thus has informational content in relation to the physical sensible *panda oleosa* nut which it now contemplates.

The informational content, now available to the chimpanzee by the enriched *phantasma,* allows the animal to appreciate, discern or believe that this object is a *panda oleosa* nut and that this nut can only be opened by cracking it with a hard rock. Also, the chimpanzee is able to discern or anticipate the taste of the nut.

I conclude that the combination of the physical sensible object and the linked/enriched *phantasma* leads the animal to act in respect of its physical environment within a planned and rational cognitive process, predicated on the animal's belief that it will achieve a desirable result, namely the acquisition of food and satiation of hunger, if it cracks the nut with a rock. In support of the argument for rationality, the chimpanzee will search for and obtain a suitable rock, rationally planning the functionality of this item towards achieving its goal of cracking the nut.

CHAPTER NINE

NEURO-SCIENTIFIC SUPPORTING EVIDENCE

So far, I have put forward arguments in support of *phantasia* as an animal cognitive ability which allows for rational behaviour in animals as intentional organisms, possessing belief-desire complexes that motivate action in logical sequences. My arguments have been addressed in terms of theory and corroborative evidence emerging from studies of animal behaviour undertaken by cognitive ethologists. I have argued that this evidence suggests the conclusion that animals share in propositional thought, as equated to *phantasia*, insofar as such ability relates to *phantasmata* of individual objects and *phantasmata* of abstracts of objects.

In order to support my thesis further, I should like to discuss briefly research recently published in the field of computational and neural systems, neurosurgery and neuropsychiatry. It is arguable that such evidence supports my contention that *phantasmata* encode concepts and that *phantasia* acts as the ability in terms of which the informational database comprising *phantasmata* presents propositions to the thinker's mind, from which rational behaviour occurs in an intentional system.

In a paper entitled 'Invariant visual representation by single neurons in the human brain' Quiroga, Reddy, Kreiman, Koch and Fried present evidence of human neural anatomy, in terms of which specific neurons in the human brain, demonstrably and invariably function as the store-place for visual information.[1] Quiroga et al state that, when images of recognizable persons or locations were presented to subjects, analysis of neurons in the subjects' medial temporal lobes showed invariant activity, which:

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[1] Quiroga (2005: 1102-1107).

> *… suggested that neurons might encode an abstract representation of an individual. We ask here whether median temporal lobe neurons can represent high level information in an abstract manner characterized by invariance to the metric characteristics of the image. By invariance we mean that a given unit is activated mainly, albeit not necessarily uniquely, by different pictures of a given individual landmark or object.*[2]

To substantiate the comments above, Quiroga et al report that subjects were shown pictures of celebrities such as Bill Clinton, the Beatles, the Simpsons, and Michael Jordan. When the subject was shown a picture of each of the above, an individual unit[3] - individual for each image - was activated. In other words, when a subject was shown a picture of Bill Clinton, unit β would activate, whereas when the same subject was shown a picture of Michael Jordan, unit φ would.[4]

The invariance referred to by Quiroga et al refers to the fact that when the same subject was shown the image of Bill Clinton during another test, unit β would activate, and when shown the image of Michael Jordan during another test, unit φ would activate. The evidence, therefore, tends to support the thesis that individual units retain the memory of individual images.

Quiroga et al's evidence goes further. Invariance also means that when the subject, who was exposed to pictures of Bill Clinton and Michael Jordan, was shown *different* pictures of Bill Clinton and Michael Jordan, unit β and φ would activate when exposed to the respective images. The method

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[2] Quiroga (2005: 1102).

[3] A neuron.

[4] The designation of units as β or φ is not mentioned by Quiroga et al, but is used here purely for the purposes of the example.

adopted by Quiroga et al was to expose the human subject to at least three different images of the same person[5] or location; in each case, the unit identified as being activated by the relevant image indicated activity on an invariable basis. The evidence is, thus, that it is the mental image of Bill Clinton or Michael Jordan, as the case may be, which triggers recognition in the unit.

In addition, Quiroga et al's experiments indicate that it is not simply the *image* of the object which triggers the unit, but also any stimulus which induces the presentation of a mental image of the object; when the subjects were shown a letter sequence describing the object, such as a card with the words 'Bill Clinton', or 'Michael Jordan' printed on it, the relevant units were activated.. Quiroga et al state in this regard that 'such an invariant pattern of activation goes beyond common visual features of the different stimuli.'[6]

In terms of the *phantasia* paradigm, and in particular Osborne's thesis of *phantasia*, Quiroga et al's empirical clinical findings presents evidence of discrete concepts and ideas being encoded in invariant medial temporal lobe units. These findings lend strong support to the contention that *phantasia* acts as a cognitive ability, in terms of which discrete concepts are encoded into *phantasmata* that are capable of recall and presentation to the subject.

I argue that Quiroga et al's work confirms that: concepts are indeed discretely stored in a mental architecture; the medial temporal lobe unit is the physical location of the *phantasma;* the presentation of the stimulus by the medial temporal lobe unit to the subject is the process of *phantasia*.

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[5] Bill Clinton, Michael Jordan, the Beatles. Due to the fact that a common image presented to subjects was the popular actress Jennifer Aniston, Quiroga et al's findings have been reported in the media as the discovery of the "'Jennifer Aniston neuron."'

[6] Quiroga (2005: 1104).

Aristotle pondered over the physical location of the organ of *phantasia.* I suggest that Quiroga et al have answered the question: it is, the medial temporal lobe of the brain where *phantasmata* are stored.

However, it must be borne in mind that Osborne not only argues for *phantasia* as a cognitive ability, but also, crucially, proposes that *phantasia* is a *common ability* of human and non-human animals, which can serve as a thread of continuity between the two. Insofar as Quiroga et al's work reveals that the function of *phantasia* is demonstrable by scientific methods, it can be argued further from their investigations that Osborne is indeed correct. Although Quiroga et al do not set the proof of this hypothesis as the intended goal of their research, they indicate that:

> *In monkeys, neurons in the upper stages of the ventral visual pathway respond to complex images, such as faces and objects, and show some degree of invariance to metric properties, such as the stimulus' size, position and viewing angle.*[7]

Although the location of the neurons which exhibit the invariant stimulation in monkeys, at least, is not the same as in humans,[8] research indicates that the invariance presupposes an underlying mental concept of the stimulus. As set out in more detail above, this accords to a large degree with the presentation of *phantasia* as a stock-room of mental images or concepts composed of *phantasmata*, which the subject utilizes to recognize stimuli. Quiroga et al's contribution is the finding that this ability is available to both human and non-human animals, a finding which supports Osborne's paradigm and my contention that *phantasia* is a *shared* human and animal cognitive ability.

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[7] Quiroga (2005: 1102).

[8] Being the upper ventral visual pathway in the case of monkeys, and the medial temporal lobe in humans.

In addition, Quiroga et al indirectly present evidence in support of the *phantasia* paradigm, when they state that stimuli can be *incorrectly* recognized, leading to a unit becoming activated even when the stimulus is not the same. As an example, in a subject who was presented with a picture of the Sydney Opera House and the Baha'i Temple, and who thought that both buildings were views of the Sydney Opera House, the neuron unit for the Sydney Opera House activated when presented with a picture of the Opera House and the Temple, and a letter sequence reading 'Sydney Opera House'.[9]

In conclusion, the evidence presented by Quiroga et al supports the hypothesis that information is stored in human and animal brains by means of the encoding of information into neurons, and that such information is accessed, or presented to the mind of the owner of the information by a physiological process which equates, in broad strokes, to the process suggested by Aristotle, which he termed *phantasia*.

[9] Quiroga (2005: 1105).

CHAPTER TEN

CONCLUSION

Is it relevant or helpful to think of animal rationality in the field of cognitive ethology in terms of Aristotelian *phantasia*? Byrnum asserts that it is:

> *Aristotle's theory of perception is often thought to be of merely historical interest. This misconception derives, in part, from the fact that Aristotle employed physical and physiological theories that are now outdated. It is relatively easy, however, to replace Aristotle's physics and physiology with modern theories and still preserve his basic account of perception.*[1]

It is also useful to consider that Aristotle would arguably be compelled to accept Osborne's arguments in regard to animal rationality, by the force of his own maxim that '*whatever is moved is moved in virtue of the actions of an external agent;*'[2] As Coppleston points out, Aristotle holds that the initiation of movement in animals is not an absolute initiation '*for there would be no movement were the food not an external attractive agent*.'[3]

As discussed at length above, for the animal to react or to initiate movement in respect of the external attractive agent (food), in circumstances in which the food is *not* in the immediate environment perceivable to the animal, it is necessary to assume that it is the *phantasma* that initiates the action. This implies the existence of a rational belief-desire complex - that initiates belief that the food exists and can be found, and a corresponding desire to find it - to explain this aspect of animal behaviour.

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[1] Byrnum (1993: 90).

2 Coppleston (1966: 320), citing Aristotle from *The Physics*, H1, 241b39ff.

[3] Coppleston (1966: 320).

At the very least, those who follow behaviourist paradigms of animal activity and thus refuse to allow that animals are rational beings, may be interested to find that, through Osborne's concept of *phantasia*, animals should be recognized as 'intentional systems.'[4] and 'high order intentional systems.'[5] Jamieson goes further by arguing that scientific method and scientific proof are not the only means of proving mental abilities in animals, and that although science may be a high class producer of quality cognitive products, there is little reason to believe that it has a monopoly on them, or that the only form of knowledge is scientific knowledge.[6]

Even if there is no empirical, scientific proof of mental ability in animals, theories of animal cognition which are demonstrably provable from behavioural evidence can serve just as well to ground a moral outlook towards animals. Arguably, the thesis of *phantasia* as a cognitive faculty is just such a paradigm, which theorizes logical mental states and belief-desire complexes in animals, based on rationality and which is supported by the findings of cognitive ethology.

Osborne has formulated a paradigm of *phantasia* as a mental system of representations, available to both humans and animals insofar, as it relates to the perception, storage and presentation to the mind of *phantasmata* of objects and *phantasmata* of abstracts of objects, both of which are posited to be forms of propositional thought, which entail and deal with concepts.

In the preceding chapters, I have argued that Osborne's thesis should be supported as a viable paradigm for understanding animal behaviour within an ethical framework which emphasizes continuity and commonality

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[4] Wedin (1988: 2).

[5] Dennet (1998: 289).

[6] Jamieson (1998: 79-102).

between human and animal cognitive processes, and which, in fact, removes the need for linguistic ability as a pre-requisite for rationality.

I have attempted to show that this specific *phantasia* paradigm both supports and is supported by findings in the field of cognitive ethology and the empirical data presented therein, as well as the paradigms for understanding animal rationality and propositional thought in the absence of linguistic ability. Additionally, I have suggested that the theory and data presented by Quiroga et al present corroborative evidence for the validity and plausibility of Osborne's thesis of *phantasia*.

In conclusion, I have argued that Aristotle's paradigm of *phantasia*, as interpreted by Osborne, and as further refined through my suggested formulation of *phantasmata* as *phantasmata* of objects, abstracts of objects, and abstract concepts, confirms the commonality of *phantasia* as an ability innate in both human and non-human animals. I have argued that *phantasia* provides a demonstrably competent framework for understanding and modelling animal rationality on a non-linguistic basis, which allows animal minds access to concepts and propositional thought.

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