Aristotle's A Priori Metaphor

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The paradigm of Aristotelian science continues to cause tension between scientific and literary language[1]. Aristotle's scientific legacy, the dominance of a strictly logical method, disbars and degrades any methodology which it deems not as rigorous. Accordingly, the scientific tradition enthrones the use of unambiguous language because it assumes that Aristotle's systematic methodology rejects literary explanations of reality; scientists consider any such poetic descriptions to be derivative. While tropes such as analogy, metaphor, and simile are regarded as valuable for colorful writing[2], they are dismissed as inappropriate for scientific discourse. Mary Hesse expresses her grief at this dismissal:

> It is still unfortunately necessary to argue that metaphor is more than a decorative literary device and that it has cognitive implications whose nature is a proper subject of philosophic discussion. (158)

Because I agree with Hesse's complaint, I will show how the scientific tradition has misjudged Aristotle's comments on metaphor. Though metaphor certainly serves as a rhetorical or literary device, it is not merely so. Not

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[1]This paper uses the term 'scientific' in a broad sense. Because Aristotle's relevant comments mostly concern the foundations of science, I have adopted that language to speak about a topic which has obvious philosophical implications.

[2]Though there are certainly substantial differences between the various literary tropes and their cognitive functions, Aristotle often writes about metaphor as their genus. Following this, I will not emphasize the differences.

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only does metaphor belong in Aristotle's syllogistic system, but also it is of indispensable cognitive value—it uncovers the foundation from which discovery emerges. Aristotle himself affirmed this epistemological power of metaphor as prior to scientific explanation.

Aristotle's logical writings advance a system of scientific explanation through what Aristotle terms 'definition'[3]. A definition is the conclusion "reached by a process of reasoning" (*Topica* 153a 23-24). Aristotle calls this procedure the 'dialectic' or 'syllogistic' method. As its name suggests, this method leads to conclusions which are correct, necessary, clear, and unambiguous explanations of a thing. Nevertheless, Aristotle's definition involves more than mere description. According to María Elena García, Aristotle's

> defining is not exclusively the philological or semantic analysis of a word. It is not a mere erudite study. Defining means to arrive at the essence, at the being of a thing. It is therefore as difficult as it is necessary. Definition does not define words, but the reality hidden behind them. (72)

For Aristotle, definition is not merely concerned with creating agreement in language; it can also use language to reach reality. Thus, he claims that "definition is an expression signifying the essence of a thing" (*Topica* 153a 15-16). That is what definition aims at achieving through the dialectical method—definition is the correct scientific way to arrive at a thing's essence.

This process seems to be at odds with how Aristotle understands the function of metaphor. Stephen Halliwell describes how, "Although metaphor can be examined and classified, as it is in both the *Poetics* and the *Rhetoric*, it clearly remains resistant, in Aristotle's eyes, to a 'technical' understanding" (349). Metaphor resists such mechanical delineation because it does not follow the same syllogistic path to truth that definition does. Definition is concerned with reaching a single, unambiguous meaning, whereas metaphor may admit a multiplicity of meaning. For this reason, Aristotle writes his most explicit criticism of metaphor. He claims that "dialectical disputation must not employ metaphors" and that "clearly metaphors and metaphorical expressions are precluded in definition" (*Analytica Posteriora* 97b 37-38).

Could Aristotle have asserted a more definitive criticism of metaphor? In the quotation above, "Aristotle seems to defend the exactness of words, the perfect correspondence between concept and reality. When a

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[3]Aristotle fully develops definition in *Analytica Posteriora* (II.13).

person tries to discern the various ways in which something is said, metaphor seems to lose something of its richness" (García 80). When scrutinized, does metaphor measure up? Or does it dilute and obscure the relation between thought and reality? In the *Analytica Posteriora*, Aristotle's apparently wholesale rejection of metaphor from logical activity causes a substantial problem: if metaphor is thus formally excluded from the dialectical process of definition, it follows that metaphor cannot adequately reach a thing's essence.

Despite this unavoidable conclusion, it remains unclear whether or not Aristotle actually denounces metaphor. Though in some cases Aristotle criticizes the use of metaphors in scientific discourse, he also intermittently affirms metaphor's value for scientific discourse. This inconclusive usage leaves "much that remains highly suggestive, even enigmatic, in Aristotle's treatment of metaphor" (Gordon 83). Nevertheless, Aristotle's seemingly ambiguous position can be clarified by examining how he actually used metaphors in his own writing. Though Aristotle does not completely or systematically address metaphor's positive function, he clarifies that function by frequently implementing metaphors in his writings.

Those who claim that Aristotle denied the value of metaphorical explanation in science are left to explain this gaping inconsistency: Aristotle repeatedly explains scientific phenomena, especially the difficult ones, with metaphors. As with most writers, Aristotle employs metaphors almost inexhaustibly. Aristotle speaks metaphorically of everything from biology to psychology. His metaphors range in difficulty from his infamously challenging explanation of how sense perception gives rise to the grasp of the universal (by comparing the phenomenon with a "rout in battle" in *Analytica Posteriora* II.19) to more simple illustrations of how the parts of animals look like ordinary objects (in *De Partibus Animalium*).

As Alfredo Marcos has pointed out, perhaps none of Aristotle's uses of metaphor is as crucial as in *De Anima*. This treatise is "built upon a broad set of similes and metaphors, all used to explain the most difficult doctrinal points" (129). In describing the soul, Aristotle expounds: "suppose that eye were an animal—sight would have been its soul" (*De Anima* 413a 19). Because the concept of the soul is so difficult to grasp, Aristotle uses several bodily metaphors in order to help his readers arrive at an understanding of its essence. Indeed, the entire treatise is saturated with metaphorical explanations, without which the text would be almost impossible to understand. In fact, according to Marcos, "without metaphor, there would be no *De Anima* at all" (126). Aristotle's reliance on metaphor demands further investigation into metaphor's positive role in scientific description. Analysis of his usage provides the affirmative link between logical discourse and metaphor.

Nevertheless, Aristotle scholars have largely neglected an analysis of this interpretive clue. This oversight has contributed to metaphor's unchecked dismissal from the scientific realm.

Thus, if Aristotle did affirm the explanatory function of metaphor, then the scientific tradition that has followed his supposed rejection of metaphor is mistaken. Marcos shows how, "On the basis of [Aristotle's] texts, subsequent tradition abolished the cognitive dimension of the Aristotelian theory of metaphor" (125). Taking what they supposed to be a cue from Aristotle, scientific theorists have excluded metaphor from the scientific method, thus exiling it to the realm of poetry and rhetoric. By doing this, theorists have created a standard which "excludes from science practically everything that is, in fact, characteristic of it" (Popper 53). In other words, scientific and literary language are not fundamentally divorced from each other. A more inclusive understanding metaphor would eliminate this false dichotomy created by the tradition; seeing metaphor as more than a colorful illustration does not compete with or disrupt the logical process of definition; rather, metaphor underlies and supports definition.

Understanding the relationship between definition and metaphor provides a way out of the flawed tradition which has mistakenly followed Aristotle away from the use of metaphor. Even if metaphor has a primordial role in scientific discourse, it nevertheless does not follow the same dialectical process as definition. In his *Topica*, Aristotle claims that, when something has been defined, "it is impossible that anything else should be a definition" (153a 21-22). In other words, the dialectic defines something by making it necessarily true. Metaphor does not provide this same certainty, and it would be a flaw to treat metaphor in this way. Nevertheless, such an approach seems to prevail in Aristotle scholarship; such writers attempt to force metaphor to conform to the definition model of language. Like many scholars, Stephen Halliwell describes how metaphor, as part of the poetic system, is a rationally describable element of language. He claims that it "rests, like all Aristotelian arts, on determinate and discoverable principles[4]" (90).

Thus, strict dedication to a definition-based science has caused many to see metaphor as mathematically objective. Hesse describes the result of such a view: "The ideal physical theory would be a mathematical system with deductive structure similar to Euclid's, unencumbered by extraneous analogies or imaginative representations" (3). In this model, metaphor

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[4]Nevertheless, even Halliwell is left to claim that metaphor "clearly remains resistant... to a 'technical' understanding" (349). Even theorists that are committed to the definition-based paradigm usually have reservations when it comes to the question of metaphor. They simply cannot decide where to put it.

would clearly have no place in scientific theorizing. Though few thinkers would go so far as to claim that "metaphor leaves logic in abeyance" (Gordon 89), most would certainly agree that metaphor is not reducible to a series of mathematical formulae. Metaphor is not a variable in an equation.

Such a mathematical orientation suggests that metaphor is a placeholder for a word or a concept: if needed, a person could readily exchange a metaphorical expression for a literal one. Samuel Levin describes some theorists' opinion that "language ...may suffer gaps. For Aristotle, when such a gap is filled for the first time, the result is a metaphor" (27). Does metaphor really function as a temporary substitution for more rigorous language? Does it merely articulate language's weak points? The result of this point of view is that "when a metaphor extends the range of a generic or specific predicate, it does not break new categorical ground; it simply extends a predicate into a position which, from the standpoint of the categories, already existed and was logically prepared for it" (Levin 28). If metaphor's function is thus simply a step in the evolution of a language, then, once the language becomes capable, it would theoretically be able to replace the metaphor with a more suitable predicate. Paul Ricœur believes that Aristotle did not see metaphor in this way. He claims that

> metaphor is more than a simple substitution of putting a [metaphorical] word in the place of a literal word which a comprehensive paraphrase would be capable of reconstituting in the same place. The algebraic sum of these two operations of substitution by the speaker and of restitution by the author or by the reader is equal to zero. No new meaning emerges and we learn nothing. (101)

But we *do* learn. In fact, metaphor helps us discover new things that are only possible because of metaphor's unique function; deductive language is not capable of leading to this discovery in the same way. Metaphor is more than just a place-holder because it has a genuine function in disclosing truth. N.R. Campbell echoes this sentiment; according to Campbell, metaphorical expressions

> are not 'aids' to the establishment of theories; they are an utterly essential part of theories, without which theories would be completely valueless and unworthy of the name. It is often suggested that the analogy leads to the formulation of the theory, but that once the theory is formulated the analogy has served its purpose and may be removed and forgotten. Such a suggestion is absolutely false and perniciously misleading. (Hesse 5)

This "suggestion" comes from the traditional paradigm. It is deceptive be-

cause tropes are not place-holders and cannot be substituted; the literal cannot simply exchange or substitute for the metaphorical. Rather, metaphors generate genuine and fundamental discoveries.

If metaphor is capable of this disclosure, then why does Aristotle discuss it mainly in the *Rhetoric* and the *Poetics*? Most of Aristotle's criticisms of metaphor, including his comments in the *Analytica Posteriora*, are the result of an obsession with precision. This concern is likely a reaction to the casuistries of Aristotle's contemporaries, the sophists. Aristotle criticizes the sophists for deliberately obscuring their language to win arguments. His discussion of metaphor in the *Rhetoric* thus aimed at exposing the sophists' ambiguous language. In the *Rhetoric*, Aristotle claims that correct use of language seeks "to avoid ambiguities; unless, indeed, you definitely desire to be ambiguous, as those who have nothing to say but are pretending to mean something. Such people are apt to put that sort of thing into verse" (1407a 32-35). In this passage, Aristotle is not criticizing metaphor per se, but is obviously opposing the sophists. Here, the only alternative to his logical method is caricatured as having nothing to say, much like the equivalent critique of the sophists in *De Sophisticis Elenchis* (165a 13-36). Clearly, at least one of Aristotle's concerns in the *Rhetoric* was to expose sophistry, whose techniques apparently involved the use of metaphorical language.

Aristotle also depreciates metaphor because of its ornamental function in poetic writing. According to Aristotle's *Rhetoric*, metaphors are to "help give your language impressiveness" (1407b 26-27). The footnote to the Roberts translation of this passage indicates that "the Greek word [for impressiveness] sometimes means 'inflated diction,' 'bombast,' 'pomp,' 'grandiloquence,' rather than 'dignity'" (1407b 27, 176). This usage obviously derides the function of metaphor. Aristotle follows this statement by claiming that one of metaphor's functions is merely to make "lively and taking sayings" (1410b 6-7). How can these statements be reconciled with the idea that metaphor's function is more than rhetorical? Is metaphor simply to impress or entertain?

Alfredo Marcos proposes an explanation for Aristotle's denunciation of metaphor. He claims that Aristotle does not criticize metaphors in general, but that his "criticism is leveled at the quality of the figures, not at their metaphorical nature" (124). In other words, a majority of Aristotle's criticism of metaphor is really just to assure the appropriate use of metaphor, which is why he puts the discussion in the *Rhetoric*. Accordingly, Aristotle claims that "Some [metaphors] are [bad] because they are ridiculous; they are indeed used by comic as well as tragic poets. Others are too grand and theatrical; and these, if they are far-fetched, may also be obscure" (*Rhetoric* 1406b 7-8). Instead of disavowing metaphor, Aristotle's comments can thus be read as renouncing the poor use of metaphor. Marcos explains that "if

we use a metaphor to obscure our discourse, then it will lack any justification in scientific texts. It should not be a means of expressing obscurely what can be said plainly, but rather a way of expressing difficult matters as clearly as possible, a manner of stretching language into new areas of reality" (127).

Though several of Aristotle's statements about metaphor seem to belittle its function, it is clear that, taken as a whole, Aristotle seeks to achieve something much greater in scope than mere rhetorical wordplay. Though he does write about metaphor mostly as a rhetorical tool, Aristotle's "larger purpose is to explain how metaphor promotes to consciousness an awareness of relations that subsist between the objects and concepts that make up our universe" (Levin 25). Ricœur asks a provocative, commonsensical question that illustrates this claim:

> Why would we draw new meanings with our language, if we had nothing new to say, [or] no new world to project? The creations of language would be devoid of sense, if they did not serve the general project of letting new worlds emerge by the grace of metaphor. (112)

We would not use metaphorical language the way that we do if there were nothing beyond it—if there was nothing new that metaphor is uniquely capable of disclosing. Metaphor is the creative and novel use of language which discloses truth, yet "we do not cease in linking metaphor's creative process to a non-creative aspect of language" (Ricœur 103). In order to understand this creative function of metaphor, it is necessary to branch out from its rhetorical uses. Accordingly, Mauricio Beuchot describes how "that which is used to encode serves to decode" (233). By stretching language rhetorically, metaphor uncovers meaning.

Hesse recognizes this disclosure. She believes that Aristotle's metaphors are more than simple illustrations. Rather, they are metaphysically expressive. She claims that such metaphors "seem to be concerned with the *understanding* of metaphysical terms" (147). Metaphorical language does not exist merely to suggest a new gap for literal language to fill. Rather, these deep metaphors actually establish connections with metaphysical aspects of reality.

Aristotle's rhetorical analysis of metaphor suggests this capacity—the rhetorical function of metaphor indicates what metaphor accomplishes on a deeper level. Aristotle recognizes this penetrating capability when he claims that metaphor "gives style clearness... and distinction that nothing else can" (*Rhetoric* 1405a 4-8). Thus, Beuchot's statement that Aristotle's "tropes ... work as well to encode a discourse or a text as they do to decode it" (219) perhaps best shows why "metaphor is of great value in both poetry

and prose" (*Rhetoric* 1405a 4-8): metaphor, the rhetorical device, decodes or discovers meaning. In this way, rhetoric's function exceeds the ornamental—a text employs metaphorical language not to decorate, but to disclose. Aristotle's recognition of metaphor's disclosive function is echoed by Ricœur, who describes how "the meaning of a text is not behind the text, but out in front of it. It is not something hidden, but something that is discovered and open" (107). According to Ricœur, metaphor not only opens the text, but keeps it open. Metaphor does not stand between meaning and the learner. Rather, metaphor pushes meaning out in front of itself. It does not hide meaning behind the rhetoric of the text, but discloses it by creating openness in the text. Thus, metaphor is not purely ornamental, but is functional in a more fundamental way. It is what primarily discovers.

This fundamental discovery is how metaphor gets at the essence of a thing. And it does so more fundamentally than Aristotle's definition—*in fact, discovery is what makes definition possible in the first place.* According to Marcos, "The logical apparatus of definition and demonstration does not work properly unless a connection is provided between theoretical terms and our experience of concrete reality" (134-135). This connection is not provided by the dialectic method used to reach definition. In fact,

> the judgment about truth of principles used as premises in deduction, the ascription of reference to the terms, the knowledge of causal connections concealed behind logical ones, all remain outside the logical apparatus of [the *Analytica Posteriora*]. (Marcos 135)

The method of Aristotle's logical treatises, though dialectically rigorous, requires that certain connections and references have already been made. Karl Popper shows how "no scientific theory can ever be deduced from observation statements, or be described as a truth-function of observation statements" (53).There is an underlying connection that allows those observations to progress to theory. In this progression, theories develop by knowledge of relations which proceeds by something more like invention and creative guess. This movement is not defensible in the same way as definition, but it is nevertheless necessary for the creation of scientific theory. It is accomplished by metaphor. Only when metaphor has brought the necessary relation into view can definition proceed.

Metaphor achieves this type of underlying understanding by provoking the reader to active discovery. Metaphor "requires us to see what is in front of us as different from what it at first seemed to be" (Davis 123). This linguistic diversion makes it so that "understanding new metaphors often requires an interpretative effort" (Marcos 128), which is a creative act. In fact, "Spotting resemblances for the first time requires the *invention* of new

points of view, of new interpretative hypotheses, of new and fallible con-jectures" (Marcos 133 emphasis added). Aristotle explicitly recognizes this cognitive function of metaphor in his *Poetics* where he claims that "good metaphor implies an intuitive perception of the similarity in dissimilars" (1459a 9). In other words, metaphor relies on our ability to discover rela-tionships between dissimilar things; it requires us to actively interpret the observed world. According to Marcos, "This heuristic task yields the *poetic discovery* of new analogic relationships. Every good metaphor is followed by what might be called a *heuristic inertia*" (136).

The unique discovery accomplished by metaphor creates relations in a different way than the standard scientific procedure. Karl Popper de-scribes how theory "should proceed from some simple, new, and powerful, unifying idea about some connection or relation...between hitherto uncon-nected things...or facts...or new 'theoretical entities' " (326). This developed relation is not, however, the kind of syllogistic relation that we normally at-tribute to the scientific process. In fact, these types of connections do not even occur in the traditional understanding of scientific method. Some theorists claim that "there is seldom in fact a deductive relation strictly speaking between scientific explanations and explanandum, but only rela-tions of approximate fit" (Hesse 172). This approximate fit is not simply a deductive matter, but "a complicated function of coherence with the rest of a theoretical system, general empirical acceptability throughout the domain of the explanandum, and may other factors (172). These factors require connecting previously unrelated truths through an ability to both discover and create. Ricœur describes this phenomenon:

> to speak of properties of things (or of objects) which
> would not yet have been signified would be to admit that
> the new emergent meaning is drawn from nowhere, at
> least nowhere in language...Saying that a new metaphor
> is not drawn from anywhere, that is to recognize it for
> what it is, namely an instantaneous creation of language,
> a semantic innovation that is not static in the language,
> inasmuch as it is already established, neither with respect
> to the designation nor with respect to the connotation.
> (103)

Metaphors emerge as creative innovations. They form language to accom-plish what its structure before could not attain. Aristotle describes that they have the effect of "making your hearers *see* things" (*Rhetoric* 1411b 24). Metaphorical inventions thus allow language to bring new truths into view. They inspire the legitimate discovery of new things. That is why Aristotle makes his monumental claim that

> we all naturally find it agreeable to get ahold of new
> ideas easily: words express ideas, and therefore those
> words are the most agreeable that enable us to get ahold
> of new ideas. Now strange words simply puzzle us; ordi-
> nary words convey only what we know already; it is from
> metaphor that we can *best* get ahold of something fresh.
> (*Rhetoric* 1410b 10-15 emphasis added)

Since metaphor most effectively brings truths into view, it is the basis for definition. In other words, for something to be defined by the rational dialectical process, it must have already been grasped by the process. Metaphor makes that possible by originally bringing the phenomenon into view. Nevertheless, metaphor does not undermine definition, but rather is a supportive basis for it. Hesse understands this and describes how, in a similar fashion, metaphor is a natural extension of a rational process. She explains how "rationality consists just in the continuous adaptation of our language to our continually expanding world, and metaphor is one of the chief means by which this is accomplished" (177). In other words, the creative force of metaphor brings us meaning when our knowledge of the world is expanding. Marcos describes how dialectical

> processes all require the use of a projective imagination
> based on our structured experience" which combine
> with heuristic understanding to "bring us meaning in a
> direct way. (129)

Metaphor generates meaning directly because it gathers the scientific phenomenon originally into view. Once metaphor has brought truths into view, the dialectic is able to define them. This is likely what Aristotle had in mind when he wrote that metaphor "is the one thing that cannot be learnt from others" (*Poetics* 1459a 8). It "cannot be learned because it is the underlying condition of all learning" (Davis 128).

Because it underlies the procedures upon which scientific knowledge is based, metaphor is a foundational necessity for essential knowledge. The scientific point of view that such essential knowledge can be reached only by dialectical reasoning is thus flawed. It is likewise mistaken if it assumes that Aristotle originated this perspective. Rather, Aristotle recognized the disclosive role of metaphor, and he clarified his position through his usage. He makes this practical clue explicit in his *Rhetoric* where he suggests that metaphor is valuable as more than a rhetorical or literary device. His emphasis on the proper application of the trope thus affirms metaphor's ability to initiate fundamental disclosure. Therefore metaphor, tradition-ally seen only as a rhetorical or poetic device, has far more of a role in

disclosing truth; in fact, it underlies any dialectical disclosure. Metaphor thereby becomes the basis for definition, but it does not displace definition—Aristotle's rigorous method of definition is still capable of advancing to the essence of a thing. Though definition and metaphor proceed differently, both nevertheless grasp a thing's essence. But metaphor does it first.

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