

# **Aristotelian Perspectives for Post- modern Reason (II)**

**Practical Truth and Creative Discovery**

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## Introduction

The purpose of the present paper is to advance the construction of a model for rationality for the Post-modern Age. The identification of reason with science is no longer sustainable. What I propose is the development of an idea of prudent reason of Aristotelian inspiration. My method consists in *bringing* Aristotelian concepts to the current debate by connecting them with related present-day notions. In this way, the incorporation of Aristotelian notions into the current debate is made possible, as is the integration of today's concepts into a coherent and fertile metaphysical framework, while a third effect, one of vast importance, is also obtained: from the Aristotelian perspective, the integrity of human action is recuperated, and is no longer split off in unconnected areas - Aristotelian anthropology may thus contribute to saving what Russell called 'the schizophrenia of modern man'.

Today, then, Aristotelian prudence is correctly expressed in the attitude of intellectual modesty and respect for reality that we find in thinkers like Pierce, Popper and Jonas, enshrined in the Peircian maxim of not blocking the way of inquiry and in Jonas's responsibility principle, which insists on the protection of the conditions for the continuity of life<sup>1</sup>. These positions of contemporary authors are strengthened when understood against the background of Aristotelian ontology (there is a plurality of substances; being may be actual or potential, there is a path from *is* to *ought*. Man is desiring intelligence or intelligent desire; reality is not a copy of the concept, but is intelligible).

Furthermore, things being thus, we realize that a rational attitude is fundamentally the same in the different contexts of science and in other areas of human life. It is a question basically of protecting openness of human action in the future, for we know that it will have to tackle a (socio-natural) world whose future is also open. This attitude of protecting openness does not guarantee anything, but it is the best bet we can place in order for creative discoveries to continue to be made, so that man's and nature's creativity may survive.

One might think, however, that both Aristotelian prudence and Peirce's maxim, together with Jonas's responsibility principle are a scanty characterization of human action, for they do not take into account its creative aspects. Jonas does not for a moment believe that his ethics alone can bring about total good, but rather, aware of its limits, he just seeks to protect the conditions of liberty, happiness and the future assumption of responsibilities; in the same way that Aristotelian prudence, rather than effectively producing practical truth, protects and cultivates the conditions for its appearance; in the same way as Peirce recommends as the ultimate maxim of reason, as the most universal and conclusive norm, that we should ensure the conditions needed for free research, and not block the way of inquiry. In short, the rational attitude consists above all in a protection and stimulation of the creative capacities that will allow us to adapt in the future to unforeseeable conditions. Prudent rationality, although it does not guarantee it, is directed towards *creative discovery*, seeking to make it possible at all times, ensuring and stimulating the right conditions for it,

removing obstacles, and upholding the openness of human action so that it can tackle the future course of events, always open and never altogether determined. On the other hand, the compliance with prudence and responsibility in difficult situations depends precisely on creativity. All too often human action is described from the methodological or ethical point of view as a set of alternatives, as the obligation to choose from pre-set options; in this way, it is forgotten that many times the best option - or the least bad - is not available and has to be created *while* it is chosen and put into effect. Furthermore, the development of what is created and judgement on its adaptation are again carried out under the auspices of prudence. This multiple linking of the principles of prudence with *creative discovery* demands of us an elucidation of this concept.

Current versions of prudence, like Peirce's maxim or Jonas's principle, are at the service of creative discovery. Aristotelian prudence seeks practical truth. This article seeks to trace a movement from the Aristotelian notion of *practical truth* to the Peircian concept of *creative discovery*, or, if we prefer, of *poetic listening*, as Prigogine would say. Science discovers as it creates: it *makes* discoveries. This allows its activity to go in the direction of truth, but that truth must be made, brought about and actualized. Science - unlike the Moderns - does not aspire principally to certainty, but must go on - unlike the Postmoderns - looking for truth. It will be, of course, a *practical truth*.

The recognition of the practical implication of science, in its genesis, its applications and its justification, and the renunciation of the ideal of certainty no doubt mark the end of an era. The fallibilists, like Popper, distinguish between truth and certainty. Therefore, the critique of the ideal of certainty that characterizes Postmodernism does not necessarily have to affect the ideal of truth. But once the practical nature of science is recognized, the truth corresponding to it is practical truth. The notion of practical truth is of Aristotelian origin and is set out and studied in *Ethica Nicomachea* VI, 2.

It seems to me that this notion allows us at the same time to save the objectivity of science and its constructive aspect, without one threatening the other. Within the present argument it also allows us to bring out the deep reasons for which science is a prudent activity, never subjected to a rigid method, for it is creative, nor left to the whim of the irrational, for it must adjust to the reality it discovers. It may be shown, furthermore, as an activity that makes discoveries, to be not substantially different from other human activities, such as the arts, poetry, technology or moral action, although it has clear differences of manner with them. Now that its relationship with the Aristotelian concept of practical truth has been demonstrated, the notion of creative discovery also finds a basis in ontology and in Aristotelian anthropology of act and potentiality, and therefore loses its paradoxical aspect.

To comply with the goal mentioned, I shall first set forth (in **section 2**) the contents of the Aristotelian concept of practical truth just as it appears in *Ethica Nicomachae* VI, 2. Secondly, I shall show how the Aristotelian notion of practical truth may be linked with today's notion of creative discovery (in **section 3**). To my mind, discoveries are *made* in many human

activities: in science, poetry, art, technology, politics and ethics<sup>2</sup>. In all human activities there is a theoretical aspect and a constructive one, which are only distinguished conceptually: we behold what we make, and this beholding is one of reality, for what we see are the possibilities of reality that our action has actualized, putting them before our eyes. Human action makes the discovery of similarity and puts it into practice physically (art, technology, politics, etc.) or simply contemplates it (poetry, science). In a world inhabited by a plurality of substances, real and possible, which are not absolutely *identical* or chaotically *different*, human action weaves the web of *similarities*. The ‘mechanism’ that produces similarities is called metaphor; as Umberto Eco would say: the ‘Aristotelian machine of the metaphor’, which, of course, is not a machine but a person. In **section 4**, I shall set forth this idea of metaphor as the prime nucleus of human creativity, as the creative discovery of similarity<sup>3</sup>. Finally, I shall set out the conclusions of this article and the outlook for future papers (in **section 5**).

## Practical Truth

Aristotle defines prudence (*phrónesis*) as:

A true and reasoned state of capacity to act with regard to the things that are good or bad for man<sup>4</sup>.

By this definition he distinguishes prudence from other notions. Given that it is a disposition (*héxis*), it will be distinguished from science (*episteme*), for prudence will be a knowledge linked to human action. Secondly, as it is practical (*praktike*), its result will be an action, not an object, which distinguishes it from art or technology (*tekhne*). The demand for rationality and truth ('...*metà lógoy alethe*') distinguishes prudence from moral values and sets it among the intellectual virtues. Lastly, the fact that it concerns good and evil *for mankind*, and not good and evil as abstract concepts, differentiates prudence and wisdom (*sophia*).

Prudence is not science, but neither is it simple opinion or skill<sup>5</sup>, it is genuine rational knowledge with the intention of objective truth. The truth of human action falls within the jurisdiction of the Aristotelian concept of *practical truth*, the kind of truth that seeks prudence:

Now this kind of intellect and of truth - according to *EN* - is practical [...] of the part which is practical and intellectual the good state is truth in agreement with right desire<sup>6</sup>.

Practical truth has two dimensions: concord between desire and intellect (which is why it is a kind of truth) and creation of an objective good (which is why it is practical). When there is agreement between desire and intelligence, an objective good is also produced, in the world by the action and in the subject that constructs and improves itself. So practical truth does not consist only in the agreement between two human faculties, but also has an objective dimension:

It is well said, then, that it is by doing just acts that the just man is produced [...] without doing these no one would have even a prospect of becoming good. But most people do not do these, but take refuge in theory [...] behaving somewhat like patients who listen attentively to their doctors, but do none of the things they are ordered to do<sup>7</sup>.

That is, in order to know truthfully what is good for man, one must do it:

For the things we have to learn before we can do them, we learn by doing them<sup>8</sup>.

According to Aristotle, the inherent truth of science ('*episteme*' in the narrow sense) is necessary and is not mixed with error, and the Greeks themselves suspected that this perfect knowledge was reserved for God, and man could only aspire to it<sup>9</sup>. Practical truth, however, is the result of successive corrections, of a history of trial and error, of rectifying in our conduct the tendencies to the powerful attraction of extremes; a history, according to Aristotle, of approaching the happy medium, or equilibrium. On the other hand, to lose ground towards either of the extremes is, as Aristotle says, very easy, you just have to let yourself go<sup>10</sup>.

Finally, it might seem that practical truth has to do only with the interest or usefulness of an action, and with its potential for making for a pleasant life. Thinking this way reduces prudence to a mere skill (*deinós*) or ability to achieve any ends. But prudence does not only seek partial ends but, in the

final analysis, ‘good life in general’<sup>11</sup>. Science governed by ability would be instrumental in the poorer sense of the word.

But this is only so if we forget that among man’s most conspicuous interests is knowledge<sup>12</sup>, the satisfying of curiosity about what surrounds him. Aristotle says that virtue is about pleasures and pains<sup>13</sup> and that, therefore, the most virtuous life will be the most pleasurable, the one most full of happiness<sup>14</sup>. But, according to him, what produces the most pleasure is knowledge of the world, of man himself and of the divine. Therefore, he who seeks happiness is he who seeks knowledge, truth, the philosopher in the original sense.

## Practical truth and creative discovery

It may seem that Aristotelian prudence, Peirce's maxim and Jonas's principle are indicators of a negative type, advice as to what to avoid. Indeed the Peircian maxim which we have mentioned is formulated in a negative way, as is Jonas's responsibility principle. The fact that the Greek term used by Aristotle (*phrónesis*) can be translated as prudence brings out these negative connotations even more. Some authors prefer to avoid them, rendering *phronesis* as 'practical wisdom' rather than 'prudence'. There is, however, no cause for worry about these connotations for, in fact, *phronesis* is knowledge based on experience and tends especially to foresee the unwanted consequences of our actions, above all those which would make rectification or correction impossible, and which would make us forfeit our very capacity to go on learning from experience and with it our freedom and reason. 'Prudentia' appears in Cicero as a contraction of the Latin term 'providentia', that is foresight. If the Modern ideals had been fulfilled completely, then our reason, in the shape of the scientific method, would be our eye on the future, steering research and human action with certainty in such a way that that other kind of practical knowledge, grounded on living experience, fallible and ever fearful that something irremediable might happen, the custodian of our freedom, the knowledge we call prudence, could be forgone. But this was not to be. Today we need more than ever - because our scope for action is more powerful than ever - the prudential attitude in order to avoid a one-way journey to error, slavery or extinction. That is, we need an attitude of carefulness, of watchfulness and of custodianship of our freedom, rather than a set of rules for exercising it. Nature is creative, prolific, unforeseeable and fecund, as is borne out by our presence among living things. People also are by nature nodes of spontaneity, substances projected towards the future. In the light of this reality, we do not need to become obsessed with marking routes for our creativity, or rules, or rigour for the rules, but rather with protecting or pampering the capacity for openness, for novelty, for creation, already present in nature, and also in people, in the shape of freedom. We cannot hope for a more reasonable method than one that prepares us to face what is new and unforeseeable, the extraordinary<sup>15</sup>, what nobody knows or has ever seen. Only prudence protects the way to the realization of truth, to the discovery that is made.

Of course, this way of taking prudence does not identify it with inaction. On the contrary, the custody of our freedom and creativity obviously requires actions of all kinds advised by prudence. But we know little of the roots of creativity, prudence only tells us - and without any guarantee - how to ensure its conditions here and now. Pierre Duhem comments with irony that whoever thinks that an idea comes to the scientist out of nowhere, as if by magic, is like the child who sees the chick come out of its shell and thinks that it all happened in that instant, without imagining for a moment the complexity of a long period of gestation<sup>16</sup>. The scientist usually prepares the ground through study, meditation, progress in the correct formulation of the problem, conversation, observation, reading, etc. Despite everything the hypothesis, according to Duhem, 'must germinate in him without him'<sup>17</sup>.

And, once he has an idea, again his ‘free and laborious activity must come into play’ to ‘develop it and make it bear fruit’<sup>18</sup>. We say of our idea that they occur to us, not that ‘we occur them’, but we freely take care of the conditions in which they might arise.

Knowledge, as the human action that it is, is then two-sided. On the one hand it is the fruit of human creativity, while on the other it responds to the reality of things. It is objective and subjective. We are not mere mirrors of nature, yet on the other hand relativist epistemologies will never be able to explain the nature of error, they will never be able to tell us what happens when reality simply says no. The two sides of human knowledge, which discovers reality at the same time as it creates it, is perfectly summed up in the expression ‘creative discovery’ or, as Prigogine beautifully puts it, ‘poetic listening’.

But it is one thing to have a suitable formula for talking about human knowledge and it is another to endow that formula with content, with a content that will avoid its paradoxical aspect. From my point of view, a good way of carrying out such a task is to relate the formula to the Aristotelian concept of practical truth. It is true that this concept is not free of a paradoxical aspect, but within the framework of Aristotelian philosophy it may be demonstrated to have full coherence.

For us, for the moment, it already has an advantage, that is its connection with prudence. Practical truth, that is the truth that is made, is the result of the creative force arising from the protection of prudence.

But the Aristotelian concept of practical truth has, according to the most authorized interpreters, certain limitations. It appears in connection with prudence, but not with science or technology. In these areas, truth is traditionally established by the adaptation of ideas to things. In science, true ideas are those which, so to speak, imitate the things that they are about; in the production of artefacts, these follow the ideas. The very truth of practice also has two poles, but neither dominates the other. Practical truth consists in the adaptation of wish to understanding. Here the characteristics of truth are different, because the adaptation of the two poles must happen via integration, with neither of them suffering any violence to adjust to the other, for at such a moment, man, who is intelligent desire and desiring intelligence, would be betraying himself, would cease to be authentic and true. This happens both when desires are denied by extreme asceticism and when they rule without restriction over the intelligence to the point of clouding it and forging it. In other words, what is to be achieved is not previously granted by either of the poles in such a way that the other simply has to adjust to it, but what both have to adjust to must be made as something new at the same time as the adjustment is made. Every human action consists in a creative task of this type (as does the very history of humanity), and their common result, if they are true, will be a life of fulfilment and the human being himself. In this regard, it may be said without any doubt that there exists a type of truth that is not conceived as an abstract agreement, but which rather is made, comes into effect, or to be more exact, is actualized, because the way in which wish and understanding finally come to an agreement was potential in both, and is discovered. This

is the objective aspect of practical truth. But this potentiality had to be actualized by the subject. This is the creative aspect of practical truth. The paradoxical appearance of the formula fades away once it is set against the Aristotelian background of the potential and the actual.

Theoretical truth, for its part, may now be understood as the ideal correspondence, considered in abstract, between ideas and things, as a limit humans will never be able to reach ('There is a mark to which the man who has the rule looks, and heightens or relaxes his activity accordingly, and there is a standard which determines the mean states which we say are intermediate between excess and defect'<sup>19</sup>).

We can sum up the general characteristics of practical truth as follows: it consists in the adaptation of two poles brought about by the action of a subject; it is established when the adaptation is without any violence by either pole on the other, but arises at an intermediate and better point; the result is something new and in the process both poles undergo changes; the adaptation may be understood as the actualizing of a potentiality; insofar as the potentiality was real, practical truth is objective; insofar as its bringing about requires human action, it is creative; there is no automatic rule for the creation or for the recognition of this type of truth, yet arbitrariness is excluded; it is an exercise 'determined by a rational principle, and by that principle by which the man of practical wisdom [*phronimos*] would determine it'<sup>20</sup>.

Could we extend this notion of practical truth as a creative discovery also to science and technology, and in general to all human kinds of knowledge and action? In my opinion we could. To do so we need to recognize the practical aspects of science and the cognitive aspects of technology, in order to appreciate to what extent science also creates and technology also discovers. We need to definitely integrate knowledge and action.

The genuine act of discovery does not discover what is hidden behind a veil, behind a web of appearances, behind the unstable phenomenon, but brings about what was there potentially. To discover is indeed to *make a discovery*. When by discover we mean simply remove the veil behind which reality is supposedly hidden from us, wipe our glasses, clean our eyes, rid the mind of deception, when the catharsis or the critique takes the leading role, then the illusion of method is produced. Because a veil may be unwoven in order, thread by thread, in a premeditated and orthogonal alternation of horizontal and vertical strands, or armed with scissors we can unveil along a set path. When to discover is basically to eliminate something that is there, whether a veil or a vice, an element of deception or distraction, then it can be done with method, for, at the end of the day, one knows what one is up against. When discovering, or rather making a discovery, is creating, producing what was not there, poetizing, conjecturing, inventing, then no algorithm is possible, nor is any general method, nor is there any law or rule capable of tackling the unknown, the different and new, the extraordinary. To discover is to make actual, to bring about, and thereby to make clear and obvious some facet of reality that was previously just potential. The discoveries man makes are genuinely his creation, for the potentialities that nature itself does not actualize require man's creative

intervention (whether practical or poetic) to become actual. The same is true for science as for art or technology.

To make a discovery, however, is not simply to construct (as constructivism says), but to actualize, to invent (in the Latin sense of the verb *invenio*, with all its rich polysemy). Mere construction leaves us a long way from the desirable objectivity, it steepens us in relativism and subjectivism, while actualizing brings together the creative and 'veritative' facets of every genuine discovery, of every invention, for what is said to be discovered is only really discovered if it previously existed potentially. This is the objective, 'veritative' pole of discovery.

And what is it that covers possibilities before they are discovered? A deceptive phenomenon? The appearances of the way of opinion? Deficiencies of our minds, of our conduct or of the language we use? Rather than any of this and in a much more radical way, possibilities 'are hidden' behind what substances are in act. Nothing negative or deceptive, nothing that must be eliminated, but the very act of each substance is what primarily harbours its potentialities. Discovery is not, then, the elimination of anything, but creation, the actualization of real possibilities.

Nature is creative, generative, it is *physis*, and actualizes potentialities in a natural way. Art and technology imitate nature in this, not because they copy its products, but because they produce like it. Thus is it said by Aristotle and thus is it interpreted, I believe quite rightly, by Ricœur<sup>21</sup>.

For this line of interpretation, much seems to be suggested by Heidegger in his text *Die Frage Nach Der Technik*<sup>22</sup>, where he states that technology discovers, brings about possibilities that existed in nature thanks to the creative action, the poetics, of man. The steam engine actualizes the movements that nature could, but did not, yield; wind farms actualize the electricity present in wind; solar panels make actual the lukewarm pleasure of a bath, hidden and aloof in sunlight; swords and pistols what there is of terror in iron. Technology is then a means of transformation, of actualization, and sometimes of humanization of nature (when it does not become a risk). But it is also a means of knowledge, as art is, for it brings out what was hidden, not behind a veil, but as a potentiality. And then we see metal as a resource, steam as movement or, what is more, as a journey or as a leave-taking or reunion, wind as heat under the pot, the controlled collision of two minute nuclei as the horn of plenty, or if they get out of control, as the end of man's home. But this is just a seeing, and this seeing may be distinguished from doing, or rather *in* the doing, which is technology.

Let us remember that nature actualizes its possibilities and by so doing reveals itself to us, that human technology and art do the same: with their process of making they actualize what was potential and so develop reality and our knowledge. Therefore, art and technology are modes both of action and of human investigation of reality. Both nature and technology or art afford us knowledge because they are active, because they actualize what was only potential, because they are continually inventing and making discoveries, nature because of its own dynamism, technology thanks to

human action. Such is Heidegger's view of technology (from a rather hurried and free reading).

It seems clear, then, that to technology, like art, we can apply the notion of practical truth. We can now see that the artefact is not a mere realization of an idea, but the result of a process of adaptation, of 'becoming alike' of two poles: needs (many of them 'superfluous', as Ortega y Gasset would have said, perhaps the most important ones) and availabilities (skill, materials, finance, etc.). When there is a genuine technical invention, the meeting point is not discovered mainly by an automatic method, or by a downward negotiation in which both parts give ground, but by an act of invention that gels, as a symptom of truth, in innovation. It is by no means strange that every technical innovation entails the modification of the two poles, of our needs and out capacities, this is what is to be expected from their nature of practical truth.

What about science? Is it really true to say that it *makes* discoveries? Science proceeds in the same way as nature, technology or art, except that it does not carry out the physical transformation of this into that, it just shows us this *as* that, the two points on the way together, without telling us the effective steps (that is steps that should be part of our present repertory of actions) to indeed transform this into that, or at least without taking those steps, which will be taken by technology, if the time, the knowledge and the wish should come. Here science is like poetry, which also makes us see 'that this one is that one'<sup>23</sup> and makes - and this is the key - the similarity obvious, but does not physically transform this one into that one. There are also differences, of course. They are similar in that they both live from metaphor, although they use it in different ways and chase after it with varying amounts of savagery (poetry prefers a new metaphor to the consequences of a known one, science preferring the latter). What science discovers in a creative way, that is, by actualizing the potentialities of the things themselves, is similarity. Science puts over the similarity it discovers in the form of concepts, laws and theories. Resemblance is caught and created by one and the same action. Potential similarity is caught and actualized by the mind and this idea is true, for similarity seen corresponds to similarity made. Here truth itself depends on and is identified with the creation of its object. But similarity, whose physical cause is always in the past and is of a genetic character, the present reality of which is always by way of a potentiality, unless its is actualized by a cognizant being, it also has a future dimension, the effective transformation of this into that. This is why science sometimes has desirable applications, while in other cases it shows us the possibilities that should never be actualized by anybody. (Might there also be applied poetry?)

The Aristotelian theory of action allows for a correct integration of moving desire (the physician wishes to heal), the knowing intellect (he knows that the patient needs warmth and that there is a blanket in the cupboard) and the movement that is made (he puts the blanket over the patient). Desire undergoes a process of differentiation as the result of deliberation<sup>24</sup>. On reaching a certain degree of specification, the desire thus differentiated is now in line with the repertory of available movements and

brings off the action (it is not possible to *heal*, just like that, in the abstract, but it is possible to *heal-putting-over-the-patient-here-and-now-the-blanket-in-the-cupboard*). The desire is not exterior to the intellect or the movement, nor are these exterior to each other, but movement is differentiated desire, incubated by means of intellectual deliberation.

## Metaphor as a creative discovery of similarity

The Aristotelian outlook allows us to integrate knowledge and action. Or, rather, it allows to see the human being as a unitary whole, whose motivations, knowledge and movements are only different in the analysis, but are physically integrated in one and the same substance, they are that substance. The notion of practical truth, or creative discovery, is then applicable to all aspects of human life. The prime object of creative discovery is similarity. This process of creative discovery could correctly be called metaphorization. To discover the similarity is at the same time to actualize it. The discovery of the similarity breaks the extremes of identity and difference, produces a mid point and, better, enables us to see 'this' as 'that' and, from there, to build concepts, laws and theories, and to physically transform 'this' into 'that', in what would be just one more differentiated action.

'[...]we all naturally find it agreeable to get hold of new ideas easily; words express ideas and therefore those words are the most agreeable that enable us to get hold of new ideas. Now strange words simply puzzle us; ordinary words convey only what we know already; it is from metaphor that we can best get hold of something fresh (*he dè metaphorá poiêi tôto málista*). When the poet calls old age "a withered stalk", he conveys a new idea, a new fact, to us by means of the general notion (*dià toû génous*) of "lost bloom", which is common to both things. The similes of the poets do the same, and therefore, if they are good similes, give an effect of brilliance<sup>25</sup>.'

Let us comment on some salient features of this passage. After this text, no doubt could remain of the cognitive purport of metaphor and simile, although Aristotle does stress that in order to be cognitive, they must fulfil certain requirements, that is they must be proper.

Secondly, we are informed that teaching is accomplished *by means of the kind* (*dià toû génous*), when an objective similarity hits one in the eye. The kind is but a means of gaining knowledge - it is not the final purpose of knowledge. Showing that two entities are similar in some way, that they belong to the *same kind*, enables us to transfer our knowledge of the more familiar one to the other, thus affording us a better understanding of the new or inexperienced. This transfer must, however, be subject to the filter of critical scrutiny to avoid improper uses.

Thirdly, Aristotle unites the aesthetic and cognitive aspects of an expression. In his *Rhetorics*<sup>26</sup>, he also asserts that learning and admiring are sources of pleasure<sup>27</sup>.

What does Aristotle mean by a proper metaphor or comparison? We may recall here the passage from *Poetics*<sup>28</sup> defining four types of metaphorical expression bearing in mind that he goes on to say that 'of the four kinds of metaphor the most taking is the proportional kind'. It is therefore clear that an image is proper insofar as it is based upon an objective proportional analogy and expresses a *real* similarity allowing us the information transfer from one pole to the other.

What, then, became of the creative aspect of metaphor? Did it turn out to be a mere discovery? Is this kind of knowledge not simply a mirror or nature?

The concept of *creative, or poetic, discovery* is used by Haley<sup>29</sup> as an intermediate between the traditional and interactionist views of metaphor. According to the former, true metaphor is just a discovery of underlying similarities, where the cognitive subject has a rather passive function - it is a mirror of nature. Interactionism, on the other hand, proclaims metaphoric creativity, with a subject that creates a web of connections, organizing reality in an active way. Nevertheless, this view fails to provide a clear account of the constraints affecting the creation, interpretation and evaluation of figures. Indurkha is also aware of this shortcoming and seeks to solve it. In my opinion, however, finding a solution to this problem depends on the acknowledgement of the objective pole, that is, real similarities that one can either discover or fail to discover. Yet nothing in the expression itself allows for mechanical decoding, for a metaphor works or not according to the interpreter, to his background, and his creativity in building conjectures. It also depends on the world itself, on the *potential* (but *real*) similarities between entities dwelling in it. What then, could possibly constitute a creative discovery?

We shall see. Similarities uncovered by true metaphorical expressions are real. There are objective constraints existing as *possibilities* in entities - any two entities either have or do not have the potential to be seen as similar in some respect by a given cognitive subject. We cannot, however, rest on any special intuitive faculty for similarities. The potential for objects to be seen as similar cannot be actualized or communicated without an active subject<sup>30</sup>. In the first place, we need to invent conjectures or hypotheses and set them up against the facts. In this way, we are able to descry new resemblances between objects. On the other hand we can also try to communicate them by means of a metaphorical expression, that is, by building new language or stretching the semantic range of existing language. To construe a metaphor, however, the receiver needs to display the same creative attitude as we have before nature. It is in this sense that metaphor is just as much a discovery as a creation. It may rightly be called, then, a *creative, or poetic, discovery*.

The expression 'creative discovery' is not explicitly mentioned in Aristotle's *Poetics*, nor in his *Rhetoric*, though I would not consider it anachronistic to say that its meaning may be inferred from several passages, for example:

'Metaphors must be drawn, as has been said already, from things that are related to the original thing, and yet not obviously related - just as in philosophy also an acute mind will perceive resemblances even in things far apart'<sup>31</sup>.

Therefore,

'the greatest thing by far is to be a master of metaphor. It is the one thing that cannot be learnt from others, and it is also a sign of genius[...]'<sup>32</sup>.

Spotting resemblances for the first time requires the invention of new points of view, of new interpretative hypotheses, of new and fallible conjectures. *Similarity is not that which is at the same time in two different*

*places or substances, but that which can be created from both by a cognitive agent.* Consequently, similarity is not a direct or ontic relationship between two or more objects, as all dynamic action is, but one established by means of a subject<sup>33</sup>. In spite of the objective character of *potential* similarities, there are no *actual* ones unless they are established by a cognitive subject.

We very often find that a good metaphor, because of its creative nature, seems unpredictable yet, owing to its characteristic of objective discovery, it appear obvious to nearly everybody once enunciated. Thus, Aristotle said that metaphor gave greater clarity than anything else could<sup>34</sup> and makes us see<sup>35</sup>. Metaphor, Aristotle states, brings our senses face to face with reality: ‘I mean using expressions that represent things as in a state of activity (*ósa energoûnta semáinei*)<sup>36</sup>.

## Conclusion

Is there still anything left like a method of discovery? Something does indeed remain different from ‘anything goes’, a mid point between algorithm and anarchism: the prudent being and the metaphorical being. This is the only rule that can face up to an ever different reality, new and changing, because it is law incarnate: it is the prudent person who can carry out prudent actions, it is the metaphorical person who can create new connections, images or theories. An a human being is thus a being set in time, creative, who can respond to novelty with novelty. Prudence advises us always to have an open mind and an open attitude, to welcome as true that which comes to us as truth, but never in such a way that it becomes impossible to check it, always with some, albeit remote, reserve. In the same way that prudence recommends virtue as a precondition of freedom, of rectification, of correction, and in the final instance, of creation. Only prudence can extract wisdom from past experience and direct future action in a non-mechanical but rational way, without certainty or arbitrariness, remaining always open to novelty, to the extraordinary, whether it comes from the world or from the person himself. Only prudence is compatible simultaneously with truth and creativity. Prudence recommends also a culture of itself which will make us not only prudent, but also, as Paul Ricœur says, metaphorical<sup>37</sup>. This is the genuinely creative part, which will also have to be built into the person himself and which no method can guarantee if it does not arise from within or we do not appropriate it from a culture. In any event, Aristotle is more optimistic regarding the possibility of becoming prudent than becoming metaphorical. The former seems to be attainable through education, by doing prudent works with the guidance of a prudent person. While, according to Aristotle, it is very important to be metaphorical, but ‘it is the one thing that cannot be learnt from others; and it is also a sign of genius for to draw good metaphors is to perceive resemblance’<sup>38</sup>. In my opinion, there must remain for further research the problem of whether it is possible to cultivate creativity. Since Aristotle’s time, many things have changed, among them our knowledge of didactics and of the psychology of learning.

Finally, I should like to be permitted to point out that Aristotle himself was able to glimpse the possibility of applying the notion of practical truth to science, to wisdom and to technology. There is a text by Aristotle which seems to me to be extremely valuable in this regard, contained in *Metaphysics* M 10. Naturally, if we seek to make use of the Greek’s ideas in today’s debates, we should not lose sight of this passage, perhaps one with the most bearing on the present of all Aristotle’s works. In it he distinguishes two kinds of ‘science and knowledge’: potential and actual. He basically says that the idea that science concerns the universal is true only to a certain extent, because it is also possible to speak of a science of the particular, ‘[that] deals with *a this*’. Potential science and knowledge will indeed concern the universal, but science and knowledge in act will concern what is in act, that is, ‘*a this*’. Whenever we get to know something or to recognize it in the present, what we get to know is not a universal, but *a this*. We do of course know what we know *through* the universal, ‘by means of

the kind', but in act we know what is in act. We must also bear in mind, that an act is not something that finishes in an instant. The Aristotelian notion of act - as is made clear in *Metaphysics* Θ 6 - is not linked to instantaneousness but with full presence, which can be prolonged through time, for we can in one act see and go on seeing, live and go on living, think and go on thinking, be happy and go on being happy. I cannot here develop all the implications of these passages<sup>39</sup>, which are many and profound and require a complete re-reading of Aristotle, but I would at least like to suggest that practical truth could be understood as the truth of science in act.

## Notes

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1 Basically, these are the conclusions obtained in the first part of this study: ‘Aristotelian Perspectives for Post-modern Reason (I). *Phronesis*, Scientific Rationality and Environmental Responsibility’. I have reserved the term ‘post-modern’ and derivatives, hyphenated, simply to refer to the time coming after the modern period. I shall use the term ‘postmodern’ in reference to a given style of philosophy, with a tendency to the so-called weak thought, relativism and aestheticism. This type of thought is *post-modern* chronologically, but typically modern in content, for it is a reaction like so many others that have counterpointed the progress of the enlightened rationalist project (nominalist, relativist and romantic, nihilist, existentialist, vitalist and irrationalist currents, etc.). The terms ‘actual’ and ‘Actual Age’ are used to designate a certain content for post-modern time, a different content, of course, from the merely postmodern, a content inspired in the notions of *act*, *actuality*, and *action*. So, ‘Actual Age’ will be the name of a period, like ‘Modern Age’, or rather, far from any historicist interpretation, the name of a proposal to give content to the post-modern period, which may or may not be fulfilled

2 I believe that it would also be correct to say that in its dynamics, nature discovers (to us) aspects of reality.

3 In this section I shall use basically the conclusions drawn in a previous article: A. Marcos (1997): ‘The Tension between Aristotle’s Theories and Uses of Metaphor’, *Studies in History and Philosophy of Science*, 28: 123-139. In Marcos (1997), an attempt is made to interpret the Aristotelian theory of metaphor. According to it, for Aristotle, metaphor would be a creative discovery of similarity, the same in science as in poetry: a discovery because in substances there already exists the possibility of their being seen as similar in some aspects, and creative because this possibility can only be brought into effect by the action of a cognizant being. There I stated that the formula ‘creative discovery’ was in the spirit but not in the *letter* of Aristotle’s texts. Today, I think, nevertheless, that this formula is indeed also present in the *letter*: in *Ethica Nicomachea* (VI 2), Aristotle speaks of ‘*aletheia praktike*’, practical truth, but it could also be translated as discovery that is made, creative discovery.

4 *Ethika Nikomacheia* (EN) 1140b 4 et seq.; see also 1140b 20 et seq.. I take aristotelian texts in their english translation from W.D. Ross and J.A. Smith (eds.), *The Works of Aristotle Translated into English* (Oxford: Clarendon Press, 1908-1952).

5 EN 1142a 34 et seqq.

6 EN 1139a 26 et seqq.

7 EN 1105b 10 et seqq.

8 EN 1103a 32 et seq.

9 Aristotle, in some parts of EN VI, suggests that genuine wisdom belongs to gods (EN 1141a 22; 1145a 9-11), but also that man must, in his knowledge and behaviour, aspire to the divine, for man really is what there is of divine in him (EN 1178a 25 et seqq.).

10 EN II 9.

11 EN 1140a 26.

12 *Meta* 980a 22.

13 EN 1104a 10-14.

14 EN X 6-8.

15 ‘The extraordinary: everything’. Jorge Guillén put it like this and it is difficult to get more into fewer words.

16 P. Duhem: *La théorie physique*. Marcel Rivière, Paris, 1914, p. 337.

17 Duhem, *op. cit.*, p. 390.

18 Duhem, *op. cit.*, p. 391.

19 EN 1138b 22-25.

20 EN 1106b 36 et seq.

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21 P. Ricœur: *La métaphore vive*. Du Seuil, Paris, 1975. See also, for example, *Poetics* 1448b 34 and the note added by V. García Yebra in his excellent, erudite and highly documented translation (1992, pp 138 and 257, note 68).

22 M. Heidegger: 'Die Frage Nach Der Technik', in Martin Heidegger: *Die Technik und Die Kehre*. Neske Verlag, Tübingen, 1962, pp. 5 and ff.

23 Aristotle: *Poetics* 1448b 17; author's translation following García Yebra, 1974 (see note 21 above).

24 I take this interpretation of the Aristotelian theory of action from Lear (1995): *Aristotle. The Desire to Understand*. Cambridge University Press, 1988. The practical syllogism would only be a dried, fossilized version of this living characterization which is integrated into human action. The practical syllogism would be a *logikós* study of the action. While this characterization adopts the *physikós* way, it seeks to tell us what the action is really like, which is not the sum of wish plus intellect, but desire-differentiated-by-intellect. Logical analysis is necessary, but if we go no further than the logical analysis of what physically is the same, we are preparing the ground for 'the schizophrenia of modern man'.

25 *Rhet* 1410b 10-19.

26 *Rhet* 1371b 4 and f..

27 S. Mas Torres, 'Platón y Aristóteles: sobre filosofía y poesía', in D. Sánchez Meca and J. Domínguez Caparrós (eds.) *Historia de la relación filosofía-literatura en sus textos*, Suplementos de *Anthropos*, No. 32 (Barcelona: Anthopos, 1992), pp. 5-10, see p. 8.

28 *Poet*, 1457b 6 and ff.

29 I take the expression 'creative discovery' from M.C. Haley, *The Semiosis of Poetic Metaphor* (Bloomington: Indiana University Press, 1988), where a Peircian theory of poetic metaphor is explained. I think that it could be a valid translation of '*aletheia praktike*'.

30 Even our natural ability to catch surface similarities has phylogenetically evolved by means of creative activity and corrections, as authors like Popper or Quine have pointed out. See, for instance, K. Popper; *A World of Propensities* (Bristol: Thoemmes, 1990); W.V. Quine, 'Natural Kinds', in W.V. Quine, *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), pp. 114-138.

31 *Rhet* 1412<sup>a</sup> 10 and ff.

32 *Poet* 1459a 5 and ff. See also *PN* (464b 5 and ff.), where Aristotle wrote a beautiful passage on resemblance in dreams in the same purport as the previously quoted ones (it even contains a metaphor full of suggestions).

33 In this sense, Scaltsas affirms that 'similarity between substances cannot consist in the presence of a distinct (abstract) component in different substances. Rather, it consists in the derivation of the same distinct entity out of different substances', in T. Scaltsas, *Substances & Universals in Aristotle's Metaphysics* (Ithaca: Cornell University Press, 1994), pp. 197-8.

34 See *Rhet* 1405a 8 and ff.

35 See *Rhet* 1411a 25 and ff.

36 *Rhet* 1411b24-26. The author is stressing the sensitive aspects of understanding in this passage. Others exist in the same direction, for instance, those that establish the cognitive relevance of images: Aristotle affirms that we take delight in our senses, 'and above all others the sense of sight' (*Meta* 980a 21 and f.), and that never does the soul think without an image (*DA* 431a 14-17; *PN* 450a 1 and f.). Understanding is compared to the soul's sight (*EN* 1096b 29), and, especially, active understanding to the light (*DA* 430a 14-17). With regard to wise and prudent persons (*phrónimos*) we can read: 'for because experience has given them an eye they see upright' (*EN* 1143b 11-13). On cognitive functions of imagination for Aristotle, see also M.V. Wedin, *Mind and Imagination in Aristotle* (London: Yale University Press, 1988); on perception, D.K.W. Moddrak, *Aristotle: The Power of Perception*, (Chicago: University of Chicago Press, 1987).

37 P. Ricœur: *La métaphore vive*. Du Seuil, Paris, 1975.

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38 Aristotle: *Poetics*, 1459a 5 and ff..

39 I have made an extensive commentary on these passages in *Aristóteles y otros animales. Una lectura filosófica de la biología aristotélica*. PPU, Barcelona, 1996, pp. 138-146 and 166-175.