

ARISTOTELIAN ORGANICISM, YIN YANG THEORY AND OUR REPRESENTATION OF REALITY

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ABSTRACT. *The paper discusses Aristotelian organicism and the yin yang theory from the view-point of their overall adequacy to provide a comprehensive conceptual context to aspects, at least, of our contemporary representation of reality. The context may refer to specific fields of scientific research, to our everyday mode of thinking and acting, or to both. As the survey goes on, it is increasingly made clear that we deal with two different types of conceptuality. The yin yang bipolarity may be defined as a pattern of change with a practically unlimited field of applicability. The Aristotelian organicism outlines a model of change which stirs our rational faculties to search for a purpose amidst the accumulated data. In the first case the pattern may be creatively used within a vast variety of contexts. In the latter, the theory creates a conceptual context based on the four causes as first principles.*

KEYWORDS: *opposites, yin-yang, purpose, function*

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Introduction

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1. All-Pervasiveness of the Yin Yang Bipolarity

I start from the observation that the yin yang bipolarity, in its endless declinations, currently seems to gain in popularity at the most heterogeneous fields, from medical science to interior decoration. Notwithstanding the fact that European thought most frequently favors a binary conceptual pattern, the reason for such a “rush” may well be due to the practical aspect of the Chinese bipolarity.

First, the yin yang theory describes natural processes by spontaneous alternance of pairs of opposites. It advances a model of becoming ruled by automation (*ziran*, lit. *self-so*) characteristic of nature. Laozi and subsequent philosophers, both Daoists and (Neo-) Confucians, underline the impersonal character of the activity of opposites. In the *Laozi*, we read that “*Heaven and Earth [the archetypal pair of opposites] are not humane [pu ren]; They consider the myriad things to be straw dogs*” (*Laozi*, 5). The characteristic of the Confucian virtue of humaneness is caring, loving, taking care of, fostering and preserving. By omitting such functions from the workings of the paradigmatic pair of opposites, Laozi rejects both the idea of purpose, even unconscious instinctive, and that of a conscious agent as creator or regulator of natural processes. The incessant alternance of successive pairs of opposites suffices to account for reality as becoming. Wang Bi comments the passage in these terms: “*Heaven and Earth engage what is natural to things. They accord with ‘non-action’ and ‘non-creation’ and the myriad things order themselves of their own*” (cited in Chen, 1981, 69). The contrast between human purposefulness and natural automation is explicitly illustrated in another significant passage: “*Thirty spokes converge at one nave, but only when there is non-being does the function of the carriage exist; We mould clay in order to fashion a vessel, but only when there is non-being does the function of the vessel exist*” (*Ibid.*, 11). The commentarial tradition explains that being designates utility and non-being designates function (Chen, 1981, 90). Without contesting this interpretive line, I point to the tension introduced by Laozi between, on the one hand, human intentionality and production, and, on the other, natural creation coming from spontaneity, non-action, non-intention. In the Daoist context, a realistic and pedagogic account of natural processes stirs clear of any idea of nature as planning, going on by trial and error and ultimately of evolution or progressive change.

Neo-Confucianism, following the path of classic Confucianism, conceives nature as self-changing and self-organizing. The metaphysical principle of *li* might provide a platform for a reflection on natural finality, either on the individual level of natural beings or on that of nature as a whole. Far from that, Neo-Confucians have focused on the impersonal quasi automatic arranging or organizing capacity of *li*. Although it is immaterial and precedes forms, i.e. physical things, it is immanent in their manifestation as individual beings. A. C. Graham explains it thus: “[*Li*] is itself conceived as a vast three-dimensional structure which looks different from different angles. In laying down the lines along which everything moves, it appears as the Way

(*Dao*); in that the lines are independent of my own personal desires, it imposes itself on me as Heaven (*tian*); as a pattern which from my own viewpoint spreads out from the sub-pattern of my own profoundest reactions, it appears to me as my own basic Nature (*xing*)” (in Angle, 2009, 35). S. Angle sums up the situation as follows: “*Li* is indeed a kind of pattern or network of interdependencies, a pattern that is constituted partly by my own ‘profoundest reactions’” (*Ibid.*). The component of ‘profoundest reactions’ introduces subjectivity in the heart of the structuring process of reality. It is only one aspect of *li*; the other one is the objective conditions of the environment, of the external context to which I respond. An intelligible world cannot leave aside important aspects of subjectivity, such as emotions. When we speak of emotions we speak of aspirations and pursuits. Therefore, Neo-Confucian analysis does not discard personal aspirations and intentionality as co-factors of the structuring process of reality. It is equally true that a certain degree of suspicion surrounds human affects in the sense that more often than not they express egotistic tendencies. Instead of establishing networks of cosmic dimensions, they isolate to monad-like closed milieu.

Such instances, easily multiplied, point to a conception of nature and naturalness that rejects any idea of purposeful direction. Nature and natural beings are not goal-oriented; they just make the most of the present circumstances and when everything works well, i.e. to the mutual benefit of everybody involved, then harmony is achieved. Even personal emotions and intentions are not the driving forces of humanity. No-action in Daoism or humaneness in neo-Confucianism is beyond the sphere of personal or collective drives. They express a more fundamental level of depersonalization, expressed as return to the original nature and pristine naturalness.

In these terms, the yin yang bipolar model of change appears as automated and purposeless. There is no teleology; just the alternance of opposites. It is equally significant that the yin yang theory enjoys a tremendous momentum in contemporary Western literature. It well coincides with the current denial of any idea of teleology in the natural processes. This is a long persistent reaction to Christian dogma of divine providence; the denial of providence has also banned any idea of searching for purpose or goal in the natural world. Science describes and explains processes and so does, in its own idiomatic manner, the yin yang pattern. In fact, the yin yang pattern, ready to put forward opposite extremes, may facilitate the propagation and understanding of some aspects of modern science which seem too abstract or abstruse to the average reader. The super symmetry cosmological theory, for instance, has attracted much attention by Daoist scholars. Matter and anti-matter may be rendered in terms of being and non-being, the foundational pair of opposites preceding Heaven and Earth (*Laozi, 1*). Such combinations of Western scientific theories with the yin yang tangible and easily perceived pattern of change are made possible by the shared idea that it suffices to give an account of natural processes in order to explain how nature works.

2. Aristotle's criticism of pairs of opposites as principles of change

With Aristotle we come to an entirely different conception of nature. Here teleology plays the first role and organizes beings-not processes or events- as finalizing or goal-oriented individuals. The vocabulary also expresses a person-oriented conception: Beings are accounted for as interactive living entities inasmuch as they pursue natural goals. They thus are naturally endowed with a purpose in contrast to the previous view which explains functions and events. Aristotle perceives an innate inner perception of every living being to pursue excellence. Living beings have focus whilst living delineates such focus to so many pursuits. Pursuits vary, change, come back and obsess. There are infinite declinations to the theme of aspirations and goals and all of them define and structure every single individual life.

Aristotle is familiar with the pattern of change by means of pairs of opposites. His Greek predecessors had thoroughly delved in such theories. He singles out Parmenides on the one hand and the so-called – by him- Naturalists, as Democritus, on the other. In *Physics I*, he surveys their views in order to advance his own theory on the principles of natural change. In main lines, he does not reject the explanation of change by pairs of opposites. Indeed, change is the transition from one extreme to the other or to the intermediate; in any case, the extremes or the intermediate must be clearly determined. Accepting the general pattern, does not mean that Aristotle accepts his predecessors' various theories. He finds them simplistic and erroneous: Bad reasoning based on bad premises. So, let's survey briefly his main points of criticism. First he remarks that all of them take as principles the opposites. This is all too understandable inasmuch as principles cannot come one from the other or from other things, whilst everything must come from the principles. This concerns the first pair of opposites which come neither from other things, nor from each other (*Physics, I, 188a 27-32*). As a general rule, Aristotle concludes that things born and things decayed come from opposites or end in opposites or intermediates. The intermediates do not create any difficulty as they come from the opposites, as, for example, colors come from white and black (*188b 25-28*). “Therefore, all beings becoming naturally, are opposites or come from opposites” (*188b 28-30*). Aristotle finds out that his predecessors may well agree on the general idea of opposites as principles, they nevertheless diverge as to the content of opposites. In his view, this is a futile discussion, as the standard of choosing one pair of opposites rather than another is entirely arbitrary, based on subjective criteria (*188b 30-189a 11*).

The discussion takes a fresh turn with a seemingly incongruous question: Are the opposite principles two, three or more (*189a 12-13*)? They definitely are neither one nor -as advanced by Anaxagoras-infinite (*189a 12-23*). They are finite and at this point Empedocles was right (*Ibid.*). Here comes the Aristotelian twist, which changes everything. “But if they [the opposites as principles] are finite in number, one reasonably may not conceive them as two; for one may wonder how density may naturally act somehow upon thinness or thinness upon density. Likewise for all other opposition; for friendship does not mix up with hatred, neither creates something from it, nor does hatred from friendship; but both [act] in another third [term]” (*189a 24-30*). Naturally, the third term is none other than the subject-substance-matter,

whilst the opposites are the predicates-form. A further argument makes clear that whatever becomes is composed of subject (matter) and form (190a 15-190b 22-23). Now, the introduction of the subject transforms the idea of opposites. Opposites do not need to be two in order to bring about change: “*because it suffices one of the opposites, with its absence or presence, to bring about change*” (191a 7-9). At this point, Aristotle advances that matter is one of the principles and form is another. Matter, as subject cannot have an opposite and the opposite of form is deficiency (191a 13-15).

Aristotle takes great pains in order to adapt the concept of change to *hylomorphism*. Pairs of opposites as principles of change become obsolete. They explain all right, but-as we shall soon see- they are inadequate to give precise information on the modality of change. They merely describe the general framework wherein change takes place. They don't explain what changes and for what reason. According to Aristotelian substantialism, what changes is a subject; it changes either by itself or moved by some external force (192b 12-14). The line of arguments points to a major innovation in the field of natural movement, namely purpose. Form is primarily the organizational principle of life. Beings exist, but they don't just drift about, left in a thoughtless stream of growth and development. They have a purpose, a goal. Aristotle makes the distinction between the end and the goal, for “*not every end is a goal, but only the best*” (194a 37-38). Imagination and instinct in animals, reason and intention in humans, even the drive to nourishment and growth in plants, go far beyond mere function. All, in their personal manner, pursue what is best for them; some do it quasi-instinctively, others need deliberation, decision and choice. The what for (*to hou heneka*) is the driving force of natural beings and the great contribution of Aristotle on what a living being individually and collectively really means.

The distance taken from pairs of opposites as explanatory principles of nature and natural beings leads to another important consequence: It conditions the space of initiative and goal-oriented action – purpose again- where beings evolve according to natural tendencies but with more or less freedom. The main objection of Aristotle to the pairs of opposites seems to focus on the issue of necessity and randomness versus freedom and self-determination. Let's follow the argument.

According to the representatives of pairs of opposites, natural phenomena are not driven by a *telos* but by necessity (*anagkê*). For instance, the warm is so by nature and likewise the cold, etc. Such things happen by necessity (198b 13-18). Such explanations give an impersonal, “scientific” account of phenomena, seemingly unassailable. Nature may well act not in view of a certain purpose or for the best, but in the manner of Zeus who rains by necessity and not for maximizing harvest. For when vapors ascend they cool down and the cold turning to water returns to earth. The maximization of harvest is just a consequence (198b 20-28). Teeth likewise grow diversely and accidentally their different shapes respond to different functions (198b 29-34). “*And naturally, the beings to which all happened as if there were in them a teleological destination survived, for they were found adequate; the others, which were not made in this way, disappeared and disappear, as Empedocles says about*

cattle with human face” (198b 35-40). Aristotle raises two objections. First, natural phenomena are always or most often as they are. Random and spontaneous phenomena appear exceptionally and cannot claim to constancy and permanence. Much rain in winter and heat in summer cannot be accidental phenomena or simple coincidence. Therefore, they exist in view of some purpose. However, such things exist by nature, as the proponents of such ideas advance. Therefore, purpose is within change and within natural beings (198b 42-199a 7). The second argument is based on the idea of time sequence, or prior and posterior. Nature works as we do; rather we work as nature does, but it is easier to start from the human level in order to understand the workings of nature. We make things for a certain purpose and likewise natural creation serves a certain purpose, “*for the prior and the posterior entertain the same relation to each other in both artificial and natural things*” (199a 19-20). This is particularly evident in the flora and fauna. Leafs are made for protecting fruits, swallows make their nest and spiders their web and all such phenomena prove that teleological causality exists within natural beings and changes (199a 27-32). Nature being the compound of matter and form, and form being the goal, for all else is made for this goal, it (form) is the teleological cause (199a 33-35).

Aristotle further mentions that the issue may concurrently be studied according to the bipolarity *dynamis* and *entelecheia*. Matter is no being by accident, whereas deprivation is no being in itself. Deprivation as no being cannot be essence, whereas matter being closer to being is in a way essence, but deprivation is absolutely not essence (192a 4-8). In sum, Aristotle points that previous philosophers who explained natural phenomena and change by pairs of opposites confused ontological categories, such as no being by accident or no being in itself, as on a parity with each other and with being.

3. And our Representation of Reality

Modern scientific theories wisely abstain from pointing to any purpose in natural phenomena. Having recourse to purpose in order to explain natural phenomena would be taxed as infantile fixation. As I have stressed earlier, the yin yang theory well accords with an impersonal order of things governed – as Aristotle has pointed out- by necessity.

In my view, goal oriented scientific explanations abound without being expressly taxed as such. The most prominent case is without doubt the theory of evolution by natural selection. Darwin defends his theory as an entirely hazardous series of occurrences which all concur in the most inexplicable and marvelous way to promote the survival and continuation of the fittest by the transmission of their characteristics to their descendants. Darwin follows a method of analogy reminiscent of the one familiar to Aristotle. He observes the way humans proceed to breed domestic races in order-as he prudently puts it- to perpetuate their favorite stock and then extrapolates to the workings of nature. As humans select the best animals to breed, natural selection permeates to the fittest individuals to transmit their characteristics to their descendants. Nature works in the manner of humans, therefore by observing the way humans work, we may understand the way nature works.

More than two thousand years before Darwin, Aristotle had firmly established the analogy in his discourse on the four cause theory. The human paradigm concerned a sculptor and his sculpture. The material corresponds to the material cause, the idea of what the sculpture will look like corresponds to formal cause, the agent/sculptor corresponds to efficient cause and the sculpture as a finished work of art corresponds to the final cause. Aristotle explained thus that human activity is always goal-oriented even if the goal is not always as obvious as in the case of a sculpture. Therefore, concludes the argument, nature works towards a direction. Natural beings have goals and aspirations and are goals in their own right. Darwin took up the same analogy human activity-natural process but denied to the latter part of the comparison the existence of purpose. He firmly denied any idea of evolutionary direction. However, it is hard to pass unnoticed the ascending direction from simple to complex organisms culminating – one is tempted to conclude naturally– to us, lucky humans.

Recent research recognizes the importance of teleology in Aristotle’s scientific writings, such as *De Partibus Animalium*, etc. There Aristotle applies the principles of his philosophy in a manner adequate to the subject-matter. He gives an account of organisms and their function. More specifically, he delves mostly in the workings of the nourishing soul – to be explained shortly- which corresponds partly to the biological level. This properly functional teleology constitutes scientists’ favorite field of glossing over.² The so-called “scientific writings” reflect partially the teleological cause in its full philosophical development. In order to understand what Aristotle implies by teleology, we need to consult his philosophical writings. Due to time constraints, I shall focus on one major text from *De Anima*. In the discussion of the nourishing soul, the most basic and common to all living beings, Aristotle explains its purpose as follows: “*Her [the nourishing soul’s] work is to give birth and nourish, for the most natural work of animals/living beings, those which are perfect and not imperfect, nor spontaneously born, is to create another being similar to them, animal to create animal and plant to create plant, in order to participate as much as they can to the eternal and divine. For all desire this and do for its sake whatever they do according to nature. The goal [lit. the for its sake] is of two kinds, the one is the final cause and the other is the whereby the end is achieved. As living beings cannot participate to the eternal and divine by their permanent individual existence, for none of the perishable may remain the same, inalterable and numerically one, each participates to the divine in the way it can, other more other less. It does not remain the same but similar to it, not numerically one, but one in species*” (*De Anima*, II, 415a28-415b8).

The passage is not a marginal note, but a foundational text giving a precise definition of what the teleological cause means in respect to living beings. Its scope far exceeds the functional accounts of the zoological writings by determining a metaphysical perspective to all forms of life with the exception of imperfect or self-

² For an updated account of Aristotelian science, see the highly readable and encyclopedic in scope Armand Marie Leroi. 2014. *The Lagoon. How Aristotle invented Science*. Bloomsbury. London.

born beings. In seeking to participate to divine eternity, beings seek to mate and reproduce another being similar to them but quite distinct. What persists and participates to eternity are not individual beings but species. In other words, individual beings are perishable, but the various species are imperishable. The transmission of form from parents/father to children receives an almost sacred significance, inasmuch as it carries the print which permeates to parents to partake of immortality.

Aristotle equally makes provision for the final cause within the limits of an individual life. Individuals are the final cause of their creation and pursue ends and aspirations within their finite life span. Happiness is, for instance, an individual goal, the final cause of a rational human being and therefore its pursuit mobilizes all the resources of an individual. It may well be that these individual goals are species determined with personal and temperamental variations, as we may observe in the properly human goal of happiness and its endless modalities among its aspirants.

The philosophical development of the final cause introduces two important variants: first, the continuity of personal aspirations and behavior and the continuation of the species. As individuals aspire to immortality, they reproduce in order to persist in their descendants and thus contribute to the continuation of their species. The individual failure to become immortal becomes the inception to persist on a collective level. Personal choice, natural characteristics and proper behavior are the conditions for the continuity of life on earth. Whether species are literally inalterable or may gradually modify is a question left ambiguously unaddressed by Aristotle. The central idea is how the individual transmits the form and inversely a species depends on the performances and good health of its members.

The second variant is the value attributed to each and every living being. All living beings are defined as directional beings and as goals in themselves. Unlike human artifacts, living beings have or are capable of conceiving and pursuing specific purposes. They are not defined by their functions but by their goals. A goal is what seems best for its aspirant. Aristotle establishes the dignity of living beings on their absolute value as self-ends.

Conclusions

Today, the yin-yang theory attracts more attention as an overall pattern of describing practically all phenomena from inorganic matter to complex living organisms and from the supersymmetry theory of cosmology to the nanolevel of molecular biology. One is tempted to wonder whether a ubiquitous pattern provides an adequate explanation or merely perceives phenomena as the interaction of two opposite forces. In any case, it accords with the contemporary tendency to impersonalize scientific data.

Aristotle creates a detailed theory of finality and perceives all beings as goal-oriented. His theory has never seriously inspired intellectuals, let alone scientists.

The introduction of finality in the natural and man-made world changes priorities. Technology has arrived at a crucial point where questions of ethical and existential order are pressing. The question of finality and purpose are discussed in

the form of ethical doubts, regrets, wise warning, etc. It is all too clear that there is absence of forethought. Further, the question of purpose as inherent coefficient of growth and activity comes to the foreground with the advent of a new era in the production of artificial intelligence. Robots accumulate an enormous amount of data, comparable, before long, with human intelligence. The question of purpose, independently from their makers' planning, starts raising doubts. If robots are complex enough to compare with human activity, they may or may not develop a will of their own. The final cause is clearly inherent to the product without having been introduced by external agency. It all seems to work as if the accumulation of data comports by its nature its proper finality. What this entails in real situation is yet to find out.

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