HISTORICAL AND SYSTEMATIC CONSIDERATIONS REGARDING THE FOUR MOST BASIC PHILOSOPHICAL ASSERTIONS

REFLECTING ON THE INTERSECTION OF PERENNIAL PHILOSOPHICAL PROBLEMS

Danie Strauss
School of Philosophy
North-West University
Potchefstroom Campus

ABSTRACT

One of the hall-marks of early Greek philosophy is that it commences with an awareness of certain basic aspects of reality. Reflecting on these aspects gave rise to recurrent issues, such as the problem of *unity and diversity*, the *whole and its* (cohering) *parts* as well as *constancy and change* – later on also captured in the opposition of being and becoming. Parmenides and his school characterized "being" mainly in spatial terms to which a metaphysical connotation is sometimes attached. Zeno, the Eleatic philosopher, best known for his paradoxes directed against multiplicity and motion, actually discovered the spatial whole-parts relation. Anaxagoras explored another significant insight in his claim that everything coheres with everything else. These developments paved the way for Aristotle to stipulate two criteria for continuity still reflected within contemporary set theory. What is noteworthy in this context is that the way in which Aristotle handled the problem of being and becoming caused him to restrict knowledge to conceptual knowledge, i.e., to knowledge constituted by universal features. According to this view of Aristotle what is *individual* withdraws itself from the grasp of conceptual knowledge. Then attention is given to some implications of the relationship between constancy and change, with particular reference to the nature of constant principles and the varying ways in which they could be applied in unique situations as well as to our awareness of identity. This analysis paves the way for an explanation of some analogical interconnections between different aspects. It also generated some crucial questions to the idea of a *logic of change*, followed by a concise assessment of the nature of monistic isms, specifically related to the aspects of number and space. In what then follows the distinction between concept and idea (conceptual knowledge and concept-transcending knowledge) is illuminated in order to substantiate the ultimate conclusion of the article regarding the four most basic "idea-statements" one can formulate about the universe. This is accomplished by showing that terms derived from number, space, movement and the physical aspects could be employed in a concept-transcending manner, expressed in the following four statements: (i) Everything is unique; (ii) Everything coheres with everything else (iii) Everything remains identical to itself; and (iv) Everything changes.

One of the fascinating features of philosophical reflection is that the classical problems have a tendency to recur not only in philosophy but also within the various special sciences. That these problems are ultimately related to fundamental modes of explanation becomes apparent against the background of (early) Greek philosophy. Briefly analysing this legacy will enable us to highlight what arguably may be considered to be the four most basic statements a philosopher can formulate concerning reality.

Keywords: One and many; unity and diversity; uniqueness; coherence; constancy; identity; change; conceptual knowledge; concept-transcending knowledge

1. THE QUEST FOR A PRINCIPLE OF ORIGIN

The first persistent urge of early Greek philosophy is given in the search for a principle of origin. The implicit unity of such a principle immediately generated the related problem of the *one and the many*, or, in more general terms, the connection between *unity and diversity*. This problem, furthermore, brings up another recurring issue, namely the quest for a basic denominator employed as a mode of explanation in order to understand the universe.
These issues clearly surfaced within the mind-scape of the initial nature philosophers of ancient Greece for they opted for principles of origin such as *water* (Thales), *fire* (Heraclitus), *air* (Anaximines) or the *unbounded-infinite* (the *apeiron* – Anaximander). Later on in Greek philosophy God, the idea of the good and the One (Plato's dialogue *Parmenides*) are confronted with the dialectical opposition of two supposedly eternal, mutually exclusive principles of origin, namely *matter* and *form*. Particularly within neo-Platonism the One and the Many (as the *apeiron*) embodied the form-matter dialectic. But the latter unfolded itself within Greek philosophy through a confrontation with the problem of constancy and change. In his dialogue *Cratylus* Plato addresses this problem. Cratylus was in the grip of the conviction of Heraclitus, namely that everything is absorbed in continuous flux (see Plato, *Cratylus* 439e-244a).

2. THE CHALLENGE OF CONTINUOUS FLUX

Aristotle remarks that during his youth Plato "become familiar with Cratylus and with the Heraclitean doctrines (that all sensible things are ever in a state of flux and there is no knowledge about them) … views he held even in later years" (Aristotle, *Metaph*. 987a 32 – 35). Although Plato works with fixed definitions, he is indebted to Heraclitus by believing that sensible things cannot be defined "as they were always changing" (*Metaph*., 987b 6-7). Plato calls things "of this other sort … Ideas," to which he adds that "the many existed by participation in the Ideas that have the same name as they" (*Metaph*. 987b9-10).

Wrestling with this problem eventually gave birth to the substance concept with its distinction between *essence* and *appearance*. Since the Renaissance the substance concept had to give way to the function concept which increasingly permeated philosophy and all the academic disciplines. However, the starting-points for this functionalistic development is already found

in Greek philosophy because Greek thinking commenced by exploring alternative aspects (modes of explanation) – the main concern of this article. At this point we may mention Pythagoreanism as a first example of over-estimating an aspectual (modal) point of entry. The school of Pythagoras believed that the essence of everything is expressible in numerical terms, captured in their famous slogan "everything is number." Hasse and Scholtz allude to their "Arithmetica universalis" (see Hasse and Scholtz 1928:5 ff.)

3. PARMENIDES: THE ATTEMPT TO AVOID THE PROBLEM OF CONSTANCY AND CHANGE

Parmenides and his school attempted to avoid the problem of constancy and change altogether. This is done by exploring spatial features in his characterization of "being." What IS *is* and not-being cannot be. For neither can one know non-being (it cannot be accomplished), nor express it (Diels-Kranz, B Fr. 2). The third B Fragment concludes: "Therefore thought and being are the same."

Guthrie summarises Aristotle's understanding of Parmenides as follows: "Aristotle's interpretation of Parmenides was, then, first that reality is one, unchanging and eternal" (Guthrie, 1980:56). The significant characterization of *being* is found in B Fragment 8 where it is described as displaying the following hall-marks: "since unborn it is also immutable, … it was not and will not be, because in the now it is at once present as a whole, one, coherent (continuous)" (Diels-Kranz B Fr. 8:2-6).

4. AN AMBIGUITY IN THE USE OF SPATIAL TERMS

Although these terms have *spatial* connotations Parmenides is not interested in spatial problems as such, for he is rather applying these spatial features to his metaphysical theory of *being*. Perhaps it would be more precise to discern in his *Fragments* a twofold approach, one exploring spatial terms in a metaphysical sense and the other characterizing being in original spatial terms. Sinnige explicitly refers to these two descriptions of being. He discovers in the thought of Parmenides an account of *being* which is largely expressed through "spatial images," understood in a metaphysical sense (such as saying that *being* is determined in all respects) (B Fr. 26-42) and in terms capturing a spatial-cosmological connotation (such as saying that *being* is a spatial whole, kept in balance from within and not bordered upon by another being) (B Fr. 42-49). We shall return below to the two senses in which Parmenides used spatial terms.

5. A DEEPENING OF OUR UNDERSTANDING OF SPACE

Another step was needed to explore the full meaning of space. It is found in die discovery of the whole-parts relation by Zeno (belonging to the Eleatic school of Parmenides). In his B Fragment 3 Zeno highlights this relation from opposing sides. In his first approach he considers the perspective from the multiplicity (of parts) which cannot be more or less, entailing that their number must be limited. But when approached from the whole to the parts it is always possible to find more between two existing things and once more between them,

which means that the number of existing things are unlimited (infinite). This argumentation must be understood against the background of B Fragments 1 and 2. In die first Fragment of Zeno (saved for us by Simplicius) the terms "part" and "whole" are used before it is stated: "When there are many things, then of necessity they must at once be small and large: small up to nothingness and large up to limitlessness." Regarding Fragment 2 Simplicius also mentions a "limitless division." The first three Fragments therefore entail the notion of *infinite divisibility*.[1]

Later on Aristotle articulates the whole-parts relation in terms of continuity and its infinite divisibility: "Moreover, it is plain that everything continuous is divisible into divisibles that are infinitely divisible" (Aristotle, *Physics* 231b15-16). Just before this he explains that "that which is intermediate between points is always a line" (*Phys*., 231b8-9).

6. THE CRITERIA FOR CONTINUITY

Aristotle also specifies another criterion for continuity, namely that the extremities of different parts must be one (see Aristotle *Metaph*., 227a23-25). If a line is continuous according to Aristotle, the line between two points entails that whenever a point of division is considered it has to be understood both as the end-point and as the starting-point.
It is remarkable that Cantor and Dedekind stipulate the same criteria for continuity. For Cantor a perfectly coherent point-set constitutes continuity. However, the notion of "perfectness" used by Cantor is the equivalent of Dedekind's cut theorem (see Cantor 1962:194). Böhme explains the situation as follows:

> … when a Cantorian continuum as such is divided into two by means of the indication of a point such that the one set contains those points which are in numerical value greater than or equal to the indicated point, while the other set contains those points of which the numerical value is smaller than or equal to the numerical value of the indicated point, both parts are again continuous. Such divisions are possible into infinity (due to the perfection of the continuum), and the parts are still coherent in the Aristotelian sense (i.e. their limit-points are the same) (Böhme 1966:309; see also Strauss 2013).

7. TWO KINDS OF INFINITY

At the same time the above-mentioned developments in Greek philosophy paved the way for exploring the meaning of infinity in two directions: what is *small* and what is *large*. Anaxagoras partially expresses it already in his first Fragment where it is stated that all things were together, limitless as to their number and minuteness; for what is small was limitless. But in Fragment 3 both view-points are mentioned. In what is small there is not a smallest but always what is still smaller, just as in what is large there is always something larger. The next

[1] In addition to Zeno's arguments against multiplicity he also challenged movement: "Something moving neither moves in the space it occupies nor in the space it does not occupy" (B Fr. 4). Movement is first granted, but then eliminated as being impossible.

two Fragments assume the coherence (continuity) of the world order: nothing exists on its own, "for everything takes part in [coheres with] everything else" (*ἀλλὰ πάντα παντὸς μοῖραν μετέχει*) (B Fr. 6:15-16).

Just like the initial undifferentiated "One" was soon turned into the "One and the Many," the indivisible (spatial) "whole" eventually turned out to be infinitely divisible. Note however that where Aristotle refers to the Platonists in his *Metaphysics* in this regard he explicitly mentions that the "One" is used in more than one (!) sense (reminiscent of what Sinnige highlighted in connection with the way in which Parmenides employed certain terms both in a spatial and a metaphysical sense):

> But in fact the Platonists speak as if the One were homogeneous like fire or water; and if this is so, the numbers will not be substances. Evidently, if there is a one itself and this is a first principle, 'one' is being used in more than one sense; for otherwise the theory is impossible (Aristotle *Metaph*. 992a8-10).

8. BEING AND BECOMING

The tension between the two spiritual forces in the thought of Empedocles, namely between love (*philia*) and hate (*neikos*), toggles between *being united* and *being separated* – an eternal fluctuating process (B Fr. 17:6-7). What surfaces here again is the above-mentioned problem of constancy and change (as contemplated by Heraclitus and Plato). The general form within which it captured the development of Greek philosophy is known to us as the relation between *being* and *becoming*. Ter Horst summarizes the alternative options chosen by prominent Greek philosophers as follows:

> The solution of Parmenides and to a lesser extent Democritus is to reduce becoming to being. The solution of Heraclitus is to reduce being to becoming. Plato's solution is to maintain both becoming and being by dividing them over different domains. Finally, Aristotle attempted to maintain both by uniting them in a special way (Ter Horst 2008:68).

9. ARISTOTLE: RESTRICTING KNOWLEDGE TO CONCEPTUAL KNOWLEDGE

Aristotle struggled with an even more basic problem, namely the question: what is *individual* (*unique*)? Initially he proceeds from a primary substance (*proten ousian*) that is supposedly purely individual. He holds that in the case of a primary substance it is indisputably true that the term *substance* signifies "that which is individual" (Aristotle, *Categories* 3b10-11). Yet "a secondary substance is not an individual, but a class with a certain qualification; for it is not one and single as a primary substance is; the words 'man', 'animal', are predicable of more than one subject" (*Categories* 3b115-17).

For Aristotle a concept is a concept of what is general (universal) (*Metaph*. 1035b34-1036a1 – compare also *Metaph*. 1036a8). Therefore according to him true knowledge is in principle

knowledge of what is universal, i.e., general *form* knowledge. Since concepts are always directed at universal features, Aristotle actually identifies knowledge with conceptual knowledge.

10. WHAT IS INDIVIDUAL: THE LIMITS OF CONCEPTUAL KNOWLEDGE

This implies that concepts are blind towards what is individual. But by identifying knowledge with conceptual knowledge no room is left for that kind of knowledge needed to understand whatever exceeds (universal) conceptual knowledge. The crucial question is: do we have *knowledge* of what is individual? Denying this possibility is one of the undesirable consequences of restricting knowledge to conceptual knowledge. Upholding such a view still follows in the footsteps of Aristotle and the Scholastics. Peter Janich explains the Medieval position with reference to the well-known Latin slogan: "omne individuum est ineffabile" ("whatever is individual is inexpressible") (Janich 2009:110). In a work on epistemology De Vleeschauwer continues the same legacy when he states that "knowledge of what is individual is simply impossible" (De Vleeschauwer 1952:213). We shall return to what is not contemplated in this regard, namely allowing for knowledge that is not *conceptual* in nature, knowledge exceeding the confines of conceptual knowledge, i.e. *concept-transcending knowledge*.[2]

11. CONFUSING ASPECTS: THE PARADOXES OF ZENO

While the philosophical issue concerning universality and what is individual cannot be separated from number and space as modes of explanation, the substance concept (the essence-appearance issue) and the problem of identity and change cannot be separated from the kinematic and physical aspects as modes of explanation.

The so-called paradoxes of Zeno alluded to above could be seen as refuting any attempt to reduce number and movement to space for if we attempt to reduce what is truly irreducible to something else, a clash of laws will warn scientific analysis that it pursues a mistaken path. Such an error always terminates in the occurrence of *antinomies* – literally *a clash of laws*. An antinomy always relates to an inter-modal (inter-aspectual) confusion (in the case of Zeno we meet a confusion of static spatial positions with uniform phoronomic flow). The illogical concept of a "square circle" (going back to Kant 1783: 341; § 52b) merely confuses two spatial figures, appearing within one aspect only, whereas Zeno's argument of the flying arrow confuses two different modal aspects.

[2] In passing it should be noted that in the thought of Aristotle matter (*hulē*) stands in opposition to concept formation. In the third Chapter of the seventh Book of his *Metaphysics*, Aristotle elaborates this implication of his conception in a *negative* sense, namely by subtracting all determinations from being (*Metaph*. 1029a20-26), thus making matter as such *unknowable* – a conclusion that Aristotle accepts straightaway (*Metaph*. 1036a8-9). Not only are all positive determinations of being denied in respect of matter, for even their *negation* are ultimately not applied to matter (*Metaph*., 1029a27-28). The absolute formless matter functions as the limit point of all negative designations. It is therefore justified to discern here a true *via negativa* in the conception of Aristotle.

Once the kinematic aspect (of uniform flow) is acknowledged it opens up an understanding of the foundational position of the kinematic aspect with respect to the physical aspect. As not earlier, Plato already realized that change can only be detected on the basis of something persistently enduring, i.e. on the basis of constancy. Our experience of *identity* rests on this structural condition.

12. MOTION CANNOT BE DEFINED AS A CHANGE OF PLACE

Since movement is irreducible to static space it cannot be defined as a change of place, because the term *place* derives from space while *change* is primarily a physical phenomenon. The Marxist physicist Hörz explains this issue in a lucid way, for according to him the classical physics of Newton holds that a moving body finds itself at a particular point in time at a specific place. Yet if this is true it would be incomprehensible. His alternative approach follows the dialectical-materialistic conception of Engels. According to this view a moving body is at the same time at a specific place and not at a specific place. This so-called dialectical position of Hörz is explained as follows:

> Insofar as the body changes from one place to another it moves, and it reaches, as a result of its movement, always at a specific time a specific place (Hörz 1967:58).

He designates this as the "dialectical antinomy" of the change of place. According to him the following explanation avoids every logical contradiction:

> as the result of movement a body finds itself at a specific place and with regard to the movement itself the body does not find itself at a specific place (Hörz 1967:58).

13. MOTION AND THE LOGICAL PRINCIPLE OF IDENTITY

Behind the assertion of the "non-contradictory" relationship between movement and place one finds the irreducibility of the spheres of space and movement. But merely appealing to logical principles does not safeguard anyone from becoming a victim of reducing one of these two spheres to the other, i.e. of getting caught in an antinomy. This issue could be illustrated with reference to the account given by Von Kibéd of the alleged impossibility of motion in terms of the logical principle of identity:

> The principle of identity, which holds that everything is only identical to itself, actually forbids every change, every becoming-different, every stepping-outside of a substance from its being-itself (Von Kibéd 1979:59).

According to Von Kibéd, the classical metaphysical escape route, namely to distinguish between *essence* and *appearance*, does not render any help:

> The difficulties accompanying the concept of the changes of an unchangeable thing are avoided by dividing the entity into an essential and accidental part,

> thus producing the possibility of associating unchangeability with its essence changeability and with what is accidental (Von Kibéd 1979:60).

However, this does not help us either, because these accidental features of an entity are also subject to the same law of identity: "according to the principle of identity also the accidental must remain identical to itself and cannot abolish its essence, which is given in its accidental nature" (Von Kibéd 1979:60). He concludes: "The concept of change is therefore logically unthinkable" (Von Kibéd 1979:60). He continues his argument by pointing out that "the concept of causality is, logically seen, non-transparent and shows the limits of logical explanation" (Von Kibéd, 1979:60-61).

However, what is missed in this argument is an insight into the irreducibility of *constancy* and *change*, i.e., the uniqueness and coherence of the kinematic and physical modes of explanation. The mere application of the logical principle of identity does not solve the problem. The argument of Von Kibéd rather underscores the *antinomy* entailed in every attempt to reduce *change* and *constancy* to static "unchangeability."

14. CONSTANT NORMING PRINCIPLES AND THE VARYING WAYS IN WHICH THEY CAN BE APPLIED

Let us briefly look at the importance of the distinction between *constancy* and *change* for an understanding of the nature of principles within human life. It is generally accepted that principles are universal and in need of being applied within unique historical circumstances. Misunderstanding the proper relation between a principle and its historically unique application may lead to the extremes of *legalism* and *conservatism*.

Hart explains this situation with reference to various expressions of respect present in social habits of greeting. While the fundamental principle of *social respect* remains, the concrete expression given to it in greeting changes:

> In certain cultures men may express respect by taking off their hat to each other. Let's say that after some time people no longer actually raised the hat all the way, but just lifted it slightly. Still later we see people just touching the hat. In the end all that remains is raising the hand. We can distinguish between a principle (i.e. expressing respect) and actual patterns of behaviour (i.e. various actions with the arm relating to headgear). ... In spite of all that varies, something "in principle" remains invariant through all this historical development (Hart 1984:59).

Three pages further he explicitly rejects the extremes of conservatism and chaos:

> Either only lifting one's hat all the way counts as greeting, or anything I choose is greeting. The recognition of "greeting in principle" makes it possible to avoid both conservatism and chaos (Hart 1984:62).

15. ANALOGICAL INTERCONNECTIONS BETWEEN ASPECTS

In this example we have to discern something important, namely the fact that the original (kinematic and physical) meaning of constancy and change resurfaces in different other contexts. In this case the issue relates to social constancy and social change. Since there are both similarities and differences between the original context and these other contexts, one may designate them as *analogies*. An analogy occurs when two aspects or things are similar in that respect in which they differ. Just consider the similarity and difference between spatial distance and social distance – the President of a country and his bodyguard. The word "distance" captures the similarity while the difference is highlighted by the terms "spatial" and "social." Within the moment of similarity (distance) the difference evinces itself, because the spatial distance intended concerns the close vicinity of the President and his bodyguard, contrasted by the large social distance between these two persons in terms of the social stratification of a society – the *positions* they occupy within society. Alternatively we may look at mathematical space (which is both continuous and infinitely divisible) and physical space (which is neither continuous nor infinitely divisible). In spite of these differences both kinds of space are extended – the similarity between them. The most exact formulation of the first law of thermodynamics explores the kinematic analogy within the physical aspect: the law of *energy-constancy*.

16. A LOGIC OF CHANGE?

In his "Logic of Change" Bogdan V. Šešić distinguishes between *simple identity*, *complex identity* and *complex change* and then mentions the productive logic of Spisani based upon the notion of "the self-differentiation of the identical one" (Šešić 1972:4). Against this background his own logic of change is seen as a productive logic capable of explaining that "the genesis of that new knowledge which represents the transitions from the concept of the *one* to the concept of the *multiplicity*, as is the case in the theory of natural numbers" (Šešić 1972:5). However his phrase "dynamic identity" is problematic because when an identity actually changes these changes still presuppose something enduring, something constant. Without such an element of constancy the idea of "identity" loses its meaning. Clearly Šešić simply dodges the classical insight of Plato mentioned earlier, namely that change can only be detected on the basis of persistence (constancy). What is interesting is that although Šešić wants to explain how his productive logic of change enables the transition from the "one" to the "many," he does not explore the problem of *unity* and *diversity* as it surfaces also in other disciplines.

Of course the notion of a (discrete) multiplicity (quantity) explores the numerical meaning of the one and the many, particularly as it comes to expression in instances of *successions*. Everyone is familiar with the succession of 1, 2, 3, and so on and we have noted that accounting for the natural numbers represents an aim of the theory of Šešić. Succession actually reflects the numerical time-order and should be distinguished from the (irreversible

physical) relation of cause and effect (causality). There is a succession of day and night and night and day, but neither is the day the cause of the night, nor the night of the day.

We have noted earlier that the whole-parts relation lies at the foundation of the infinite divisibility of a spatial whole. Russell even considers the whole-parts relation as *primitive*: "The relation of whole and part is, it would seem, an indefinable and ultimate relation" (Russell, 1956:138). Equally significant is what Russell says about discreteness and succession. By acknowledging that "greater and less are undefinable" Russell implicitly accepts the primitive meaning of numerical succession (see Russell, 1956:194; see also page 167). Later on he remarks that "progressions are the very essence of discreteness" (Russell, 1956:299). In an earlier context he also criticizes Bolzano for not distinguishing the "many from the whole which they form" (Russell, 1956:70).

One important implication of the nature of discreteness and succession is that every number, even every real number, is distinct from every other number. This general meaning should not be confused with what set theory says about "discrete," "dense," and "continuous" sets. Laugwitz emphatically states that "every number is an individual with properties distinguishing it from every other number."[3] That this view finds support in the classical definition of a set introduced by Cantor follows from the fact that Cantor speaks about "properly distinct objects *m* of our intuition or our thought" ["wohlunterschiedenen Objekten *m*"]: "We understand a 'set' to be any collection into a whole *M* of definite and properly distinct objects *m* of our intuition or our thought (which are called the 'elements' of *M*)."[4]

In addition to the fact that every number is "an individual" it is clear that diverse things function within the quantitative aspect of reality as a *multiplicity*. From this functioning certain philosophical stances thought that they can subsume everything under one or another basic denominator.

17. THE QUEST FOR A BASIC DENOMINATOR

The existence of *monistic isms*, such as *physicalism*, *vitalism*, *moralism* and *historicism* are all denying the problem of *unity and diversity*. We may also speak of the *coherence of what is irreducible*. Russell "strongly" holds "that this opposition of identity and diversity in a collection constitutes a fundamental problem of Logic – perhaps even *the* fundamental problem of philosophy" (Russell 1956:346). Multiplicity (number) and wholeness (space) provide a point of orientation for some of the most encompassing expressions found in our understanding of the world. In a Germanic language such as Afrikaans one finds that the word designating the universe rests upon the meaning of the aspects of number and space: "heelal" (a dynamic equivalent translation reads: "the whole of everything"). Translating "heelal" into

3 "… jede Zahl ist ein Individuum mit Eigenschaften, welche sie von jeder anderen unterscheiden" (Laugwitz 1986:9).

4 "Unter einer 'Menge' verstehen wir jede Zusammenfassung *M* von bestimmten wohlunterschiedenen Objekten *m* unserer Anschauung oder unseres Denkens (welche die 'Elemente' von M genannt werden) zu einem Ganzen" (Cantor, 1962:282).

English yields the well-known term "universe." The "verse" part captures the element of "diversity" ("everything"), while the "uni" part could be interpreted as an encompassing *whole* ("unity").

A distorting view of what is here at stake immediately uncovers the two most dominant philosophical orientations operative in the history of philosophy and the various academic disciplines, namely *atomism* and *holism*. The former is equivalent to *individualism* and the latter to *universalism*.

These four words concern the quest for finding a basic denominator in terms of which the "*heelal*" (universe) could be characterized and understood. Over-estimating what is universal and what is individual should rather be seen as a rationalistic or irrationalistic orientation.

Instead of avoiding any effort to reduce what is irreducible by affirming the uniqueness and irreducibility of diverse aspects of reality, an *atomistic* thinker will expand the meaning of the *one* and the *many* beyond the limits of the numerical aspect. It will fail to distinguish a *discrete multiplicity* in the quantitative sense of the term from legitimate *analogical usages* reflecting the meaning of number. Atomism (individualism) reifies the quantitative meaning of number within the context of other modes of explanation, in order to comprehend all of reality in quantitative terms – just recall how it commenced with the Pythagorean thesis that *everything is number*.

An individualistic approach to human society will reduce every societal collectivity to its simplest "elements," the *individuals*. Alternatively, *holism* (universalism) proceeds by employing the concept of a *whole* or *totality* with its *parts*. In this way the *whole-parts relation* or analogies of this relation becomes the encompassing explanatory device for an understanding of reality.

Although conceptual understanding is dependent upon *universals*, knowledge cannot be restricted to conceptual knowledge merely mediated by universality, for we have seen that although we do know what is individual, this kind of knowledge is not conceptual. Moreover, the key terms required for rational conceptual understanding exceed the limits of conceptual understanding. Cassirer is therefore justified in holding that there are "original functions that are not in need of genuine derivation." He also realised that there are relations between different functions (aspects) of reality, for he speaks of "original functions" and their interconnections. He refers, in particular, to the similarity and difference between a logical identity and diversity and a numerical unity and difference (Cassirer 1957:73-74) – an instance of an analogical relation such as that between mathematical space and physical space or spatial distance and social distance.

These ontic conditions not only make possible our concept of numbers but also explain why someone like Bernays rejects the notion that an axiomatic system in its entirety is an arbitrary construction: "One cannot justifiably object to this axiomatic procedure with the accusation that it is arbitrary since in the case of the foundations of systematic arithmetic we are not

concerned with an axiom system configured at will for the need of it, but with a systematic extrapolation of elementary number theory conforming to the nature of the matter (*naturgemäß*)" (Bernays 1976:45).

18. CONCEPT-TRANSCENDING KNOWLEDGE: ON THE WAY TO THE FOUR MOST BASIC PHILOSOPHICAL STATEMENTS WE CAN FORMULATE

In our preceding investigations a subtle difference in the use of terms surfaced. It concerns the fact that they are derived from the various aspects accompanying our analysis. The most basic perspective relates to the functions which entities familiar to us may have within different aspects of reality. In fact this entails that everything in particular has a function within the quantitative aspect of reality. A distinct multiplicity of entities have their number, they are individually distinguishable and can be counted by following one or another order of succession. Such a succession at once unveils the *discreteness* inherent to the meaning of the arithmetical aspect of reality. The way in which we articulated our awareness of the discrete multiplicity of entities eventually implicitly requires that different functions are distinguished in the process of modal (aspectual) abstraction which boils down to lifting out certain aspects of reality.

19. AN ABACUS CAN TEACH US

Just contemplate how an abacus is used in mastering the most basic arithmetical operations, such as addition and subtraction. Initially we are confronted with various aspects (or: modal functions) of such an abacus, for we commence by noticing the colour, the movement and the shape of the beads of an abacus. Only gradually do we learn to disregard their physical kinematic and spatial properties (their colour, movement and shape) in order to be able eventually to focus on the *quantitative* side of the beads. We therefore had to lift-out the numerical aspect while simultaneously disregarding the other aspects involved (such as the mentioned spatial, kinematic, and physical properties). In passing we merely note that an abacus displays many other functions as well. For example it is a cultural artefact, it has a name (lingual sign), it has an economic value (its price), it belongs to someone (a property right), and it may be beautiful or ugly (aesthetic quality).

Suppose we are speaking of the fact that this (one) chair usually has four legs. In this case these numerical terms (1 and 4) are employed in our conceptual understanding of the quantitative function of the chair. These terms are found within the structure of numerical aspect and they are employed to point at states of affairs evincing themselves within the boundaries of this aspect. When this is the case we are encountering a *conceptual use* of arithmetical terms.

20. FROM THE "ONE AND THE MANY" TO "UNITY AND DIVERSITY"

We have noticed that within early Greek philosophy the quest for a principle of origin attached a meaning to the term "One" that exceeds the boundaries of the quantitative aspect of

reality (see paragraphs 7 and 16 above) . For the Platonists to which Aristotle refers in his *Metaphysics* the "One" is used in more than one sense. Let us explore this route now further by asking if it is possible to use a term derived from our basic quantitative awareness that exceeds the boundaries of the quantitative aspect. A discrete multiplicity of things entails that each one is distinct. This insight first of all applies to numbers themselves. We have quoted Laugwitz asserting that "every number is an individual one with properties distinguishing it from every other number." Since numbers appear within the numerical mode this statement still explore the meaning of the quantitative aspect in a conceptual way. Suppose now that we want to say something about the (one) chair with its four legs that still makes an appeal to our numerical intuition of a discrete multiplicity but nonetheless alludes to all the non-arithmetical aspects of the chair as well. One way to accomplish this aim is to say that the chair is *unique*. Although it makes an appeal to the "being distinct" of the chair it refers to more than the mere discrete multiplicity of distinct entities (their function within the numerical aspect), for it intends to capture all the aspects of any particular chair. In other words the uniqueness of this (or any) chair pertains to all its aspects. We may therefore claim that our quantitative intuition has been employed in a way exceeding a conceptual understanding of numerical relations. This situation also differs from the original stance claimed by the Pythagorean school, for it does not allege that the essence of everything is expressible in numerical terms resulting in the famous statement "everything is number" (see paragraph 2 above).

After the "one" has been positioned within the context of the many, the original numerical meaning of the one and the many, employed in a conceptual way, opened the possibility also to use this numerical intuition in a concept-transcending way by speaking about the *unity and diversity* within reality, clearly exceeding the boundaries of the arithmetical aspect.

It is remarkable that in spite of the Pythagorean emphasis on a distinct multiplicity Parmenides still continued the notion of an original (undifferentiated) "One" while applying it to his view of a static, indivisible whole present at once – terminating in Zeno's paradoxes.

21. SPATIAL-COSMOLOGICAL CONNOTATIONS

Yet Sinning correctly explained the fact that Parmenides employed certain terms in a spatial sense and others in a metaphysical sense – leaving us with two descriptions of being (see paragraphs 4 and 7 above). On the one hand his account of *being* is expressed through "spatial images" while at the same time he uses spatial terms in a metaphysical sense. Sinning also designates the alternative (metaphysical) approach by referring to the spatial-cosmological connotations these terms acquire, such as when he was saying that *being* is a spatial whole, kept in balance from within and not bordered upon by another being) (B Fr. 42-49).

Of particular importance for our current context is the fact that Parmenides characterized *being* as follows: "in the now it is at once present as a whole, one, coherent (continuous)" (Diels-Kranz B Fr. 8:2-6). The close relationship between coherence (connectedness), continuity and wholeness (totality – with its infinite divisibility – see paragraph 6 above) indeed belongs to the lasting legacy of our understanding of space. Particularly within

intuitionistic mathematics we find an emphasis on the conception that having parts is a basic property of the continuum (see Weyl 1921:77 and Weyl 1976:74). In paragraph 6 above we have also pointed out that the two criteria stipulated by Aristotle for continuity are equivalent to those still employed in the Cantor-Dedekind set-theoretical account.

The meaning of space, expressing its foundation in the meaning of number through the infinite divisibility of a continuum, indeed provides us with terms sometimes used in a conceptual way and sometimes in a concept-transcending manner. The term *totality*, which is equivalent to the original spatial meaning of the *whole-parts relation*, appears to be primitive and therefore indefinable (just like *succession* or the relation between *greater* and *less*, as Russell aptly remarked (see paragraph 16 above). The *size* of a chair and its three dimensional *shape* reflect the way in which it functions *within* the spatial aspect.

The nature of modal analogies briefly explained in paragraph 15 above may help us to understand why the whole-parts relation frequently served a distorted understanding of spatial analogies within other aspects of reality. We have mentioned the fact that a distorted understanding of the spatial whole-parts relation is found in holistic or universalistic approaches. Owing to the classical universalist orientation of Aristotle we are still today accustomed to the adage: the whole precedes or is more than the sum of its parts. In his *Politica* we read: "Therefore the state, according to its nature, is prior to the family and the individual, since the whole must precede the part."[5]

22. LIMITATIONS OF THE WHOLE-PARTS RELATION

To illustrate the inherent limitations of the spatial whole-parts relation we may contemplate whether or not Sodium and Chlorine are true *parts* of table salt. Without any doubt every division of table salt will continue to display the NaCl structure typical of table salt. But what is the case when the process terminates in a single salt molecule? Dividing it will leave us with a Sodium atom and a Chlorine atom. The crucial question is now whether or not Sodium on its own or Chlorine on its own partakes in the structure of salt? Clearly, Sodium and Chlorine are not true parts of salt, showing that the whole-parts relation is limited and cannot even explain the nature of a simple chemical bond and the interlaced atoms present in such a chemical bond. The whole-parts relation is unable to account for the internal sphere of operation of the atoms which remains intact even though they are still present within the table salt molecule.[6]

5 Aristotle, *Politica*, 1253 a 19-20. The employment of the spatial whole-parts relation acquired a closer specification in the thought of Boethius, who distinguishes between *homogeneity* and *heterogeneity* – every part of an individual drop of water is still water (physical homogeneity), whereas it is not true that every part of a horse is a horse (biotic heterogeneity) (see Oeing-Hanoff, 1976:306).

6 Dooyeweerd developed a theory of so-called enkaptic interlacements that resolve this problem in a neat way (see Dooyeweerd 2017-III:694-780).

23. A CONCEPTUAL AND CONCEPT-TRANSCENDING EMPLOYMENT OF SPATIAL TERMS

We may now return to the phenomenon of modal terms employed in a conceptual and a concept-transcending manner. The core meaning of space is given in continuous extension and whatever is continuously extended "hangs together" in the sense of being connected because all the parts cohere. But when all the parts of a cohering whole are present the terms "totality" or "wholeness" are synonymous with continuous extension. When these terms are used in order to designate spatial states of affairs, then we meet a conceptual use of such terms.

Suppose that we now want to say something about a chair exceeding the boundaries of the spatial aspect and while doing it still employ a spatial term to accomplish that. What immediately comes to mind is the just-mentioned terms, *totality* or *wholeness*. Contemplating the chair in its **totality** makes an appeal to all its aspects, not merely its spatial aspect even though the term "totality" is a spatial term. Likewise the notion of *coherence*, already prominent in B Fragment 8 of Parmenides (see paragraph 3 above), is oftentimes also used in a concept-transcending fashion.

In paragraph 7 above it has been shown that Parmenides assumes the *coherence* (continuity) of the world order: nothing exists on its own: "for everything takes part in [coheres with] everything else" (*ἀλλὰ πάντα παντὸς μοῖραν μετέχει*) (B Fr. 6:15-16).

24. IDENTITY AND CHANGE

(i) We can now continue our argumentation regarding the difference between conceptual knowledge and concept-transcending knowledge by applying it also to the meaning of the kinematic and physical aspects. The core meaning of the kinematic aspect is given in uniform flow, explaining why the science of phoronomy does not ask what the cause of motion is. It is only meaningful to ask about the cause of a *change* of motion – acceleration of deceleration. The relation between a cause and its effect belongs to the physical aspect. The meaning of uniform flow is equivalent to what endures, persists or remains *constant*. We have already noted that change presupposes an element of persistency. But this is what identity means – what endures amidst of all change. Yet the *identity* of a chair concerns all its facets, not merely its kinematic aspect of relative movement (rotating on the surface of the earth, around the sun). Therefore when the meaning of motion is explored in a concept-transcending way we see an instance of the use of a modal kinematic term in the manner of an idea. When an idea-use of the kinematic term *constancy* is employed, it enables us to speak of the *identity* of an entity, its relative *persistence* or *endurance* irrespective of the changes it may undergo.

(ii) Likewise the physical term "change" allows for a twofold use of its meaning. The first one appears when genuine physical causes and effects take place. In terms of our example of the various functions of a chair it should also here be kept in mind that speaking about a changing chair embraces more than merely its physical aspect – a clear indication that the term *change* could also render a service to a concept-transcending use of modal terms.

(iii) We may now summarize our preceding arguments regarding the aspects of number, space, movement and physical change by uniting them statements which explore the core meaning of the first four aspects of reality in a concept-transcending way. Our summary statement relate to those instances where the meaning of modal terms is stretched beyond the limits of these aspects. In doing this we can now arguably articulate the four most basic concept-transcending philosophical statements about the universe available to us.

(iv) Exploring the meaning of the quantitative aspect in a concept-transcending way provides a foundation for the statement that **everything is unique**.

(ii) Stretching the meaning of space beyond its boundaries leads to the statement that **everything coheres with everything else**.

(iii) An idea use of the kinematic aspect underlies the statement that **everything remains identical to itself**.

(iv) Finally, the physical intuition of change may be stretched beyond its boundaries, yielding the claim that **everything changes**.

These statements are not contradictory because they derive from unique, irreducible aspects of reality.

Therefore, by slightly changing our focus we may capture the structure of a modal aspect in such a way as to involve all four modal aspects which occupied our attention in this article. Modal aspects are both *unique* (their sphere-sovereignty) and *mutually cohering* (their sphere-universality) while *constantly conditioning* (making possible) the functions that natural and social entities and processes may have within them.

25. CONCLUDING SUMMARY OF THE FOUR MOST BASIC CONCEPT-TRANSCENDING PHILOSOPHICAL IDEAS

In conclusion we can now say that in addition to a conceptual use of quantitative, spatial, kinematic and physical terms it is also possible to employ terms derived from these four aspects in a concept-transcending way. The four most basic idea-statements therefore explore the meaning of the aspects of number, space, movement and the physical aspect in the following assertions:

(i) Everything is unique

(ii) Everything coheres with everything else

(iii) Everything remains identical to itself; and

(iv) Everything changes

As explained above: since each one of these statements derives from a distinct and unique aspect, they are not contradictory, but rather *complementary* to each other.

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