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Relativity and relativism: historical and systematic considerations

A brief overview of the emergence of the relativistic challenge to the so-called "exact" natural sciences, such as mathematics and physics, is followed by an analysis of the crisis that Husserl experienced in questioning rationalism. Against the background of a systematic distinction between modal laws and type laws, the pervasive influence of modern nominalism is identified as the root cause of the problems of relativism as it opened the way to the so-called Copernican turn in epistemology. The crucial and constant conditions required in every assertion of relativity are highlighted, particularly with regard to the foundational role of logical discernment in respect of language use and the impossibility of affirming change and relativity outside or independent of a context of constancy, taking into account the philosophical implications of Einstein's Special Theory of Relativity. Against this background, the "(onto-)logic of relativism" is assessed and a brief characterisation is given of the fact that modern humanism has merely reified humanity's accountable freedom to give shape to underlying (ontic) principles in various (historically changing) circumstances.

Relatiwiteit en relativisme: historiese en sistematiese beskouings

'n Kursoriese oorsig van die wyse waarop die relativistiese uitdaging in die sogenaamde "eksakte natuurwetenskappe" na vore gekom het (by name in die wiskunde en die fisika), word opgevolg met 'n analise van die krisis wat Husserl ervaar het by die bevraagtekening van die rasionalisme. Teen die agtergrond van 'n sistematiese onderskeiding tussen modale en tipiese wette word die deursurende invloed van die moderne nominalisme uitgelig as die grondoorsaak van probleme van relativisme aangesien dit die weg geopen het na die sogenaamde Kopernikaanse omwenteling in die kennisleer. Belangrike konstante kondisies wat benodig word in elke bevestiging van relatiwiteit word uitgelig, in die besonder met verwysing na die funderende rol van logiese onderskeiding met betrekking tot taalgebruik en die onmoontlikheid om verandering en relatiwiteit te bevestig onafhanklik van 'n konteks van konstansie (deur die filosofiese implikasies van Einstein se spesiale relatiwiteitsteorie in ag te neem). Teen hierdie agtergrond word die "(onto-)logika van relativisme" beoordeel en word 'n vlugtige kensketsing gegee van die feit dat die moderne humanisme bloot die menslike toerekenbare vryheid om vorm te gee aan onderliggende (ontiese) beginsels in uiteenlopende (histories-variabele) omstandighede sentraal gestel het.

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Over the past two centuries the rise of historicism, in particular, challenged former certainties and the belief in any absolute.[1] Whereas, roughly speaking, one may say that the eighteenth century was the period of extreme (conceptual) rationalism, the transition to the nineteenth century is marked by an acute awareness of the historical dimension of reality. At the end of the eighteenth century this was primarily due to the pioneering work done by Johann Herder, a contemporary of Immanuel Kant. Korff calls Herder the German Rousseau and Cassirer praises him as the Copernicus of (the science of) history (Cassirer 1957: 226). Proß (cf Herder 1978: 135) finds in Herder the key figure who, in rejecting the *Aufklärung*, prepared for the advent of romantic historicism.

Although the initial intention of historicism was not to relativise everything, Dilthey (1927: 290-1), during his later development, discerns its relativistic consequences. Even those scholarly disciplines traditionally deemed to be "exact" did not escape from the all-pervasive influence of modern historicism.

1. Despair at relativism in the "exact" sciences

The first discipline apparently not susceptible to severe intellectual doubt is mathematics. In the year 1900 the world's leading mathematician, the Frenchman Poincaré, claimed that mathematics had obtained "absolute rigour". However, almost 75 years later the following pessimistic assessment is given by Fraenkel *et al* (1973: 14):

> Ironically enough, at the very same time that Poincaré made his proud claim, it had already turned out that the theory of the infinite systems of integers — nothing else but part of set theory — was very far from having obtained absolute security of foundations. More than the mere appearance of antinomies in the basis of set theory, and thereby of analysis, it is the fact that the various attempts to overcome these antinomies [...] revealed a far-going and surprising divergence of opinions and conceptions on the most fundamental mathematical notions, such as set and number themselves, which induces us to speak of the third foundational crisis that mathematics is still undergoing.

1 Klapwijk (1970) holds that historicism arose at the beginning of the nineteenth century. Meinecke traces its roots back to thinkers such as Shaftesbury, Leibniz, Gottfried, Vico, Lessing, Winckelmann, Herder and Goethe (cf Meinecke 1959: 13ff, 285ff).

In 1980 the mathematician Morris Kline (1980: 275-6) summarised the situation as follows:

> The developments in the foundations of mathematics since 1900 are bewildering, and the present state of mathematics is anomalous and deplorable. The light of truth no longer illuminates the road to follow. In place of the unique, universally admired and universally accepted body of mathematics whose proofs, though sometimes requiring emendation, were regarded as the acme of sound reasoning, we now have conflicting approaches to mathematics. Beyond the logicist, intuitionist, and formalist bases, the approach through set theory alone gives many options. Some divergent and even conflicting positions are possible even within the other schools. Thus the constructivist movement within the intuitionist philosophy has many splinter groups. Within formalism there are choices to be made about what principles of metamathematics may be employed. Non-standard analysis, though not a doctrine of any one school, permits an alternative approach to analysis which may also lead to conflicting views. At the very least what was considered to be illogical and to be banished is now accepted by some schools as logically sound.[2]

In this context the history of the logicistic programme of Gottlob Frege is both striking and sad. His first volume on the basic laws of arithmetic appeared in 1893, but after Russell discovered in 1900 that Cantor's naïve set theory was antinomous, Frege had to delay the publication of the second volume until 1903. In the first sentence of the appendix to this second volume he conceded that one of the cornerstones of his approach had been shaken. Close to the end of his life (1924/25), Frege not only reverted to a geometrical source for knowledge, but also explicitly rejected his initial logicist position. He actually completed the circle of the historical pendulum evinced in the development of Greek mathematics in a way similar to the changes that took place on the discovery of irrational numbers and the consequent geometrisation of mathematics. The discovery of the untenability of Frege's *Grundlagen* also inspired him to take refuge in the conviction that mathematics as a whole is actually geometry:

> So an *a priori* mode of cognition must be involved here. But this cognition does not have to flow from purely logical principles, as I originally assumed. There is the further possibility that it has a geometrical source. [...] The more I have thought the matter over, the more

2 What Hilbert designated a paradise created by Cantor, namely transfinite number theory (as part of set theory), is discarded by Heyting (1949: 4) as a phantasm.

> convinced I have become that arithmetic and geometry have developed on the same basis — a geometrical one in fact — so that mathematics in its entirety is really geometry (Frege 1979: 277).

While still at school, Hermann Weyl discovered Kant's *Critique of Pure Reason* in the attic of his grandfather's house. Upon reading it he immediately realised the meaning of the famous Copernican turn that Kant had experienced.[3] Weyl's first intellectual crisis occurred when he studied Hilbert's *Grundlagen der Geometrie* (1899) — a work in which the Kantian conception of Euclidean space was abandoned. Having subsequently re-orientated himself fully to the (axiomatic) formalism of Hilbert, the after-effect of the above-mentioned antinomies discovered in Cantor's set theory, combined with the opportunity he had to listen to the Dutch mathematician Brouwer (presenting a paper on the "untrustworthiness of the logical principles", in particular the principle of the excluded middle) early in the second decade of the twentieth century, once again shattered his acquired mathematical certainty.[4] Weyl (1946: 9) wrote:

> Brouwer made it clear, as I think beyond any doubt, that there is no evidence supporting the existential character of the totality of all natural numbers […] Brouwer opened our eyes and made us see how far classical mathematics, nourished by a belief in the 'absolute' that transcends all human possibilities of realization, goes beyond such statements as can claim real meaning and truth founded on evidence.

Yet he had to confess in the same article that he had suffered severely from the crisis that emerged in the foundations of mathematics:

3 Kant claims that Hume woke him from his "dogmatic slumber". Cf Kant's (1983: 260; Felix Meiner edition: 6) remark in the preface to his *Prolegomena*: "Ich gestehe frei: die Erinnerung des David Hume war eben dasjenige, was mir vor vielen Jahren zuerst den dogmatischen Schlummer unterbrach und meinen Untersuchungen im Felde der spekulativen Philosophie eine ganz andere Richtung gab."

4 In passing we may briefly mention his own account of his life story in a lecture at the University of Lausanne in 1954. He explained that his peace of mind in positivism was first shaken when he fell in love with "a young singer whose life was grounded in religion and who belonged to a circle that was led philosophically by a well-known Hegelian". This shock continued to work through until he married a pupil of Husserl: "So it came to be Husserl who led me out of positivism once more to a freer outlook upon the world" (Weyl 1969: 287).

> From this history one thing should be clear: we are less certain than ever about the ultimate foundations of (logic and) mathematics. Like everybody and everything in the world, we have our 'crisis'. We have had it for nearly fifty years. Outwardly it does not seem to hamper our daily work, and yet I for one confess that it has had a considerable, practical influence on my mathematical life: it directed my interests to fields I considered relatively 'safe,' and has been a constant drain on the enthusiasm and determination with which I pursued my research work. This experience is probably shared by other mathematicians who are not indifferent to what their scientific endeavors mean in the context of man's whole caring and knowing, suffering and creative existence in the world (Weyl 1946: 13).

As early as 1926 Finsler (cf 1975: 1-49) showed that in a purely formal mathematical discipline, defined by axioms and rules of calculus, there are propositions which can be neither proven nor contradicted (Heitler 1972: 50). But in 1931, at the age of 25, Kurt Gödel shook the world of mathematics with an article on the formally undecidable propositions in the *Principia Mathematica* of Russell and Whitehead, and related systems. Gödel showed that a proof of the consistency of arithmetic cannot be reflected in the formal deductions of arithmetic itself — the consistency of arithmetic therefore cannot be proven in terms of the axioms of arithmetic. In a formal axiomatic system Z there is always a statement A which can neither be proved nor disproved with the aid of axioms of Z. In other words, to prove that the conclusions reached from certain axioms are consistent, it is not possible to use the method in question. In principle every axiomatic system in mathematics is incomplete — it requires and presupposes insight into its content which transcends its own formalism. Hermann Weyl (1970: 269) comments strikingly in this regard:

> It must have been hard on Hilbert, the axiomatist, to acknowledge that the insight of consistency is rather to be attained by intuitive reasoning which is based on evidence and not on axioms.

Similarly, the discipline of physics evinces a mixed development during the past few centuries. The mechanistic main tendency that had dominated the scene since Newton eventually disintegrated in the face of physically irreversible processes (captured in the formulation of the second main law of thermodynamics, the law of non-decreasing entropy). Max Planck (1973: 53) characterised this mechanistic orientation as follows in 1910:

> The conception of nature that [has] rendered the most significant service to physics up till the present is undoubtedly the mechanical. If we consider that this standpoint proceeds from the assumption that all qualitative differences are ultimately explicable by motions, then we may well define the mechanistic conception as the conviction that all physical processes could be *reduced completely to the motions* of unchangeable, similar mass-points or mass-elements [emphasis mine, DFMS].

Later on a similar assessment is found in Einstein's autobiography where he highlights the difference between (physical) irreversibility and (kinematic) reversibility:

> Through this insight he recognized the nature of courses of events which, in the sense of thermodynamics, are 'reversible'. Seen from the molecular-mechanical point of view, however, all courses of events are 'reversible' (Einstein 1959: 42).

Yet, the switch to an acknowledgement of the central role of energy within the material world as such did not resolve the tension between determinism and indeterminism in modern physics. Moreover, with his well-known uncertainty principle, Heisenberg established that "it will never be possible to determine both the position and velocity of an atomic particle with an arbitrary precision" (Heisenberg 1956: 11). In April 1927, before he made known his relation of uncertainty, Heisenberg (in a personal conversation) said to Von Weizsäcker: "I believe I have disproved the law of causality" (Von Weizsäcker 1993: 132, footnote). In opposition to both Einstein and Planck we therefore find that Heisenberg and Bohr (of the so-called Copenhagen school) question the validity of (deterministic) causality, that is, the belief "that there exist laws of nature determining univocally from the present the future condition of a system" (Heisenberg 1956: 25).[5]

Initially Einstein referred to a theory of invariance while the crux of his special theory concerns the vacuum velocity of light as a constant — therefore choosing to call it a theory of relativity in no way relates to the core of his theory. Though movement is said to be relative, it is relative with respect to the (constancy of the) velocity of light. It should therefore be borne in mind that Einstein's designation of his theory does not follow from its internal structure, but rather from the prevailing historicist *Zeitgeist*.

5 Max Planck supported a deterministic understanding of causality. Compare his 1932 article on "Causality in Nature" (Planck 1973: 252).

Add to these relativistic effects of historicism the apparently new dimension of relativity introduced by the "linguistic turn", and one soon experiences the feeling of a reinforced relativism.

In its indebtedness to language as the new horizon of philosophy in the twentieth century postmodernism ultimately surrenders to the appeal of a new "all"-claim: everything is text/language/interpretation/vocabulary. Artigiani (1993: 33) highlights the link with De Saussure:

> The roots of Post-Modernism are in Ferdinand de Saussure's semiotic analysis of language [...] Words, said de Saussure, are merely arbitrary symbolic conventions whose meanings are determined by other, equally arbitrary words. Post-Modernism suggests that what is true of language and literature is true of culture generally. The information communicated by cultural symbols is meaningful only in terms of the behaviors they describe, leaving cultures as self-referential as words and as uprooted from direct contact with reality as texts. Post-Modernists therefore argue that, even if there is an independent external reality, as prisoners of linguistic conventions we cannot know it and ought to abandon the search for it.

The lingual fields in which words as semantic units are embedded surely co-constitute their meanings, and help us to understand that indeed there is no (lingually unmediated) road or access to "reality". But before taking a closer look at the complexities involved in the issue of relativism, a brief sketch of Husserl's experience of the failure of rationalism should be provided.

2. Edmund Husserl: the crisis of European 'man'

Husserl (1950: 65) claims that setting aside the natural attitude with one stroke is a matter of my full freedom ("meine volle Freiheit", 1950: 67); a matter of our complete freedom. It is indeed through a person's complete freedom that Husserl attempts to ensure the validity of his intuitionistic (transcendental-idealistic) phenomenological science-ideal. He does not want to return to the pre-Kantian rationalistic (mathematical) science-ideal. In *Krisis* he negatively disqualifies this "rationalistic science-ideal" (Husserl 1956: 119).

However, he maintains that the crisis of Europe and of the disciplines is actually rooted in what he calls a misguided rationalism ("einen sich verirrenden Rationalismus", Husserl 1954: 337). In opposition to such a misguided rationalism Husserl posits the unlimited possibilities of

the intuitionistic, phenomenological reason. His experience is that this trust is fundamentally threatened by the increasing influence of naturalism and objectivism as well as by the irrationalism of his own student, Heidegger. Husserl views the situation with a sense of hopelessness, as the crisis of Europe and the academic disciplines, and writes:

> In order to comprehend what is wrong in the present crisis the concept Europe once again has to be viewed by means of the historical directedness towards the infinite aims of reason; it must be demonstrated how the European world was born from reason-ideas, that is, out of the spirit of philosophy. The crisis will then clearly emerge as the apparent failure of rationalism. The basis of this failure of a rational culture, however, [...] is not inherent to rationalism, since it is only found in its externalization, in its decay into naturalism and objectivism. The crisis of European existence provides only two options: the decline of Europe in the alienation from its own rational existential meaning, the decay into an animosity towards the spiritual and a lapse into barbarism, or the rebirth of European existence through the spirit of philosophy, particularly through a heroism of reason that will consistently triumph over naturalism (Husserl 1954: 34).

His deepest trust of the intuitionistically conceived (transcendental-idealistic, phenomenological) philosophical reason explains why he compares the "total phenomenological attitude" and its accompanying *epochè* with a religious conversion, because it indeed involves the greatest existential change which confronts humankind as a task (Husserl 1954: 140).

By means of "complete freedom" the European is called to establish the intuitionistic, phenomenological science-ideal as the only road to the rebirth of Europe through the spirit of philosophy. The motto in the title of his article, *Philosophy as a rigorous science* (1911), continues to direct his philosophical endeavours.

Yet he did not succeed in containing the growing crisis which he experienced. For that matter, his phenomenology was turned into its opposite: an irrationalistic and existentialistic freedom motive, which derives its motivating power not from an intuitionistic science-ideal but from the ideal of an autonomously free personality. This development ruined his dream of philosophy as an irrefutable, apodictically certain science: "Philosophy as science, a serious, exact, yes apodictic exact science — der Traum ist ausgeträumt" (Husserl 1954: 508).[6]

6 "the dream has passed" / "the dream did not become true".

An increasing awareness of relativity accompanied the gradual succession of philosophical stances of the twentieth century — up to the most recent postmodern challenge to metanarratives and absolutist claims. Bearing this in mind, let us first consider the important historical contours, so as to be able to arrive at a proper understanding of the threatening relativism which is so prevalent in our contemporary *Zeitgeist*.

3. The complexities involved in reflecting on the notion of relativity

The term "relativity" stems from the word "relative" which always presupposes that something is related to something else. In other words what is acknowledged is that there are relations between "something" and "something else". Any attempt to enter into a meaningful discourse about this state of affairs entails that conceiving and designating such relations between different (or similar) *relata* requires relational concepts and descriptions pertaining to the connections between the *relata*, as well as an awareness of the ever-present mutuality of distinguishing and identification.[7]

3.1 Concepts of function and thing concepts

Both Rickert (1913: 68-69, 173, 197) and Cassirer (1957: 34) emphasise the important difference between concepts of function (relational concepts) and thing concepts. The latter concern the horizons of things, normally captured by questions about the concrete *what* (or many-sidedness) of entities, whereas the former normally surface in questions about the functional relations between entities, or the fundamental *how* of concrete reality.

The distinction needed to account for this difference is that between modal (functional) laws and type laws. The former hold universally for all possible entities, whereas the latter hold only for a limited class of entities. The laws of thermodynamics hold universally without any specification, while the law of atoms applies only to the limited class

7 Identification and distinguishing proceed on the basis of similarities and differences, which also highlight their synonymity with abstraction in this respect, for the latter is based on highlighting (equivalent to identifying) and disregarding (equivalent to distinguishing).

of entities called atoms. A type law has a specified universality: it holds universally for all atoms, but at the same time it is specified to hold only for atoms and not for other kinds of entities.

Within the Western philosophical tradition, however, these distinctions will be accused of representing a typical realistic mode of thought which does not account for the Copernican turn in epistemology since Kant, which acknowledges the constructive and constituting element present in all human cognition. Therefore another important historical digression is required at this point, directed at the all-pervasive influence of modern nominalism.

3.2 Nominalism: a denial of order for and orderliness of things

Plato discovered the (universal) law for being an entity in his account of the transcendent ideal forms (as a guarantee for the knowability of what presents itself as constantly changing within the world of becoming).[8] In contrast to Plato's view, Aristotle emphasises the (universal) orderliness of entities (known as their regularities, law-conformity or lawfulness). It should be noted that, although Aristotle (in his *Categoriae*) commences with a primary substance that is purely individual, he clearly realises that this substance withdraws itself from every conceptual grasp. For this reason he has to introduce his secondary substance, known as the universal substantial form of entities (cf *Metaphysica* 1035 b 32; *De Anima* 412 b 16). This general essence, as the universal substantial form, constitutes the basis for conceptual knowledge. Like Plato, Aristotle holds that the *logos* is not subject to coming into being and passing away: it is, after all, not "house-ness" but merely a particular house that burns down (*Metaphysica* 1039 b 22-26). Implicitly, knowledge is identified here with conceptual knowledge (based upon universality). This long-standing legacy, present in the thought of Aristotle, is continued by the phrase: *omne individuum est ineffabile.* That this epistemic conviction persisted for millennia can be substantiated by numerous references.[9]

8 Cf Plato's early dialogue *Cratylus* 439c-440a.

9 Half a century ago, De Vleeschauwer (1952: 213) recalled the saying *omne individuum est ineffabile* and still adhered to its identification of knowledge with conceptual knowledge, stating categorically: "But knowledge of the individual is simply impossible".

The controversy between Plato and Aristotle's views acquires a more profound significance when one realises that Plato actually stumbled upon the (universal) law for being an entity in his account of the transcendent ideal forms, whereas Aristotle discovered the (universal) orderliness of entities and that their perspectives were united in medieval realism which held that *universalia* have a threefold existence — *ante rem*, *in re* and *post rem*.[10]

In its radical reaction against this realist tradition, (late Scholastic) nominalism rejects all forms of universality outside the human mind. This effectively amounts to the (theoretical) elimination of the (universal) order for (law for) entities as well as of the (universal) orderliness of entities — thus leaving factual reality unstructured in its assumed chaotic individuality and uniqueness.

Modern philosophy (since John the Scot, William of Ockham, Jean of Jandum and Marsilius of Padua) has mainly explored this nominalistic line of development. If one defines rationalism as reifying conceptual knowledge (which is always built upon universal features) and irrationalism as acknowledging uniqueness and individuality (at the cost of universality), then nominalism is at once rationalistic and irrationalistic, for it acknowledges universality within the human mind (concepts or words) as well as pure, strict individuality outside it. The impasse of nominalism is reflected in the last remnant of universality in the external world of (chaotic) individuality — the individual existence of everything outside the mind is a universal feature shared by all.

3.3 Towards the Copernican turn in modern epistemology

It was Descartes's methodical scepticism, in particular, which affirmed the autonomy of the thinking subject as the ultimate starting-point for philosophical thought. He took the denial of any universality outside the human intellect to its logical consequences. The most important implicit consequence of this nominalistic orientation is that it does not acknowledge any order transcending the human being as such. A universal law-order for creatures, as well as the orderliness of such crea-

10 Before creation (*ante rem*) as ideas in God's mind; immanent within entities (*in re*) as their universal substantial forms, and afterwards (*post rem*) as universal subjective human concepts.

tures (as conditioned by the laws making their existence possible), are transposed into the human subject (the mind or language). Descartes's apparently innocent remark that "number and all universals are only modes of thought" (*The Principles of Philosophy*, lviii) exemplifies this radical re-orientation in the wake of nominalism. This all-pervasive process of transformation enthrones the human subject as a law unto itself — the defining trait of modern (Renaissance and post-Renaissance) humanism. As early as the thought of Hobbes it gives birth to the new motive of logical creation, thus filling the gap (the lack of order-determination) created by the nominalistic denial of external order and orderliness. Hobbes (in his work on material things, *De Corpore*) constructs a new reality with the aid of the concept of a moving body, after introducing a thought experiment in which all of reality is demolished into chaos. Truth is no longer seen in terms of the realistic yardstick (as the correspondence of thought and reality, *adequatio intellectus et rei*), since it merely concerns the compatibility of concepts. Ernst Cassirer (1971: 56) captures this stance as follows: "Truth does not inhere in the things, but belongs to the names and their comparison, as it occurs in statements".[11]

3.4 Kant: How can subjective conditions of thought have objective validity?

Kant radicalised the rationalist leg of nominalism in his *Critique of Pure Reason*.[12] He realised that applying the category of causality (understood deterministically) without any restrictions would necessarily lead to the abolition of all human freedom. By confining the application of reason to sensory phenomena, he simultaneously achieved two aims. This move leaves open a supersensory domain for the ethical autonomy and freedom of the human being, while it succeeds in containing the classical natural ideal of an encompassing natural science within the boundaries of the phenomenal. In his discussion of the solution of the third cosmological idea, Kant (1956: 564) once more explains that we are not allowed to ascribe any absolute reality to appearances:

11 "Die Wahrheit haftet nicht an den Sachen, sondern an den Namen und an der Vergleichung der Namen, die wir im Satze vollziehen: *veritas in dicto, non in re consistit*" (cf *De Corpore*, Part I, Chapter 3, Par 7 & 8). The similarities with Rorty's position are obvious!

12 Cf in this regard Strauss 1982.

> The common but fallacious presupposition of the absolute reality of appearances here manifests its injurious influence, to the confounding of reason. For if *appearances* are *things in themselves*, *freedom* cannot be upheld [my italics, DFMS].

That all knowledge begins with experience (as Hume asserts) is not questioned by Kant. But from this concession it does not follow that all knowledge also arises totally out of experience (Kant 1956: 1). It is well-know that Kant distinguishes between two stems of knowledge, namely sensibility and understanding.[13]

Perhaps the most important trait of Kant's "pure reason" is that it continues the motive of logical creation — carried through to its ultimate rationalist consequences. In order to understand the radical humanistic assumptions contained in the Copernican turn, the influence of Galileo has to be accounted for. Galileo indeed turned the classical conception upside down with his argument that a moving body does not need a dynamic force in order to continue its motion. In a thought experiment (explained in his *Dialogues and mathematical demonstrations concerning two new sciences*, of 1638), Galileo argues that without the effect of impinging forces a body in motion will simply continue its motion endlessly. On this basis he concludes that the motion of this body will be uniform and ever-enduring, if the plane is extended into infinity. Holz (1975: 345-58) points out that all of this radically influenced Kant's view on the thought categories. Von Weizsäcker (1972: 128) frames Kant's problem in terms of the question: "What is nature, that it must obey laws which one could formulate with one's understanding?" Kant, in fact, in his conception of the categories, actually moved a step further. The striking element in Galileo's thought-experiment is that he did not argue on the basis of any "sense-data" in order to arrive at the law of inertia. This law is derived and prescribed to moving entities solely by making an appeal to the pure understanding of a person, in its spontaneous subjectivity. This in fact highlights the crucial epistemological transformation known as the Copernican turn: primacy is no longer ascribed to the object, but to the (human) subject.

13 The *a priori* concepts of understanding are introduced as categories of understanding and they apply *a priori* to objects of intuition in general (Kant 1956: 105-6).

In a slightly different context Kant asks how "subjective conditions of thought can have objective validity, that is, can furnish conditions of the possibility of all knowledge of objects" (Kant 1956: 122). The solution Kant provides to this problem clearly demonstrates his radical humanistic conclusion: the laws of nature are *a priori* contained in our subjective understanding:

> ... the categories are conditions of the possibility of experience, and are therefore valid a priori for all objects of experience [...]; Categories are concepts which prescribe laws *a priori* to appearances, and therefore to nature, the sum of all appearances (Kant 1956: 161, 163).

In his *Prolegomena* one finds this account embedded in his distinction between empirical laws of nature and the *a priori* form-giving function of human understanding (paralleling the above-mentioned distinction between modal laws and type laws):

> We rather have to distinguish empirical laws of nature, which always presuppose particular perceptions, from the pure or general natural laws, which, without having a foundation in particular perceptions, only contain the conditions of their necessary connection in an experience. In respect of the latter nature and possible experience are entirely the same; and since within these the law-conformity of the necessary connection of appearances in an experience (without which we are totally incapable of knowing any object of the world of the sense), actually is based upon the original laws of the understanding, so it initially does sound strange, but it is nonetheless certain, when I state with respect to the latter: understanding creates its laws (*a priori*) not out of nature, but prescribes them to nature (Kant 1969: 320).

In this way Kant attempted to consolidate and strengthen the natural (mathematical) science-ideal of modernity — restricted to the (rationalistically elevated) understanding which he considers to be the (formal) *a priori* lawgiver of nature.[14]

The idea that human understanding constructs (structures) reality in a rational way is arguably the most powerful and influential stance of modern humanism. Although Kant explores this orientation in ra-

14 The emphasis on "formal" is necessary, because human understanding is not considered to be the origin of the chaotic multiplicity of phenomena (the matter of experience) given to the senses. In passing it should also be noted that Kant eventually dropped a "thing-in-itself" since he transposed this notion to apply only to the freedom of the human soul as an ethical *Selbstzweck*.

tionalist terms, its nominalist roots inherently contain the starting-point for the opposing leg of (nominalist) rationalism, namely irrationalism, which by and large succeeded in dominating the subsequent development of Western philosophy up to its most radical form in post-modernism.

3.5 The linguistic turn as a reinforced relativising factor

The last two centuries, in particular, have increasingly enforced upon the "Western mind" an awareness of the provisional, temporal (in the sense of historicity) and interpreted nature of the human condition. A rigid rationalism attached to the universality entailed in the formation of concepts was radically challenged. The human predicament is conditioned by contingent historical situations and by social practices that, in addition, reflect multiple lingually constructed meanings. Acknowledging changing historical situations, accounting for the incessant flux of linguistic meaning and constantly altering social practices, seem to impregnate our "post-modern" understanding with an image of flow exceeding all possible claims of anything enduring or persistent.

Yet at the very moment that flux, change and alteration are asserted, a constantly recurring element is present. Without assuming an embracing dimension of historicity, specific references to particular changing historical situations become meaningless, for then the subject of change vanishes, eliminating speaking about change at all. Similarly, without the enduring presence of language it becomes meaningless to speak about alterations of and shifts in meaning. And the same applies to varying social practices — what is implicitly assumed is that all such practices indeed are (and remain) social practices!

The crucial point to observe is that in the very act of affirming the relativity and changefulness of the human predicament[15] a(n implicit)

15 Hurst (2004: 20) refers to what is "flexible, adaptable and revisable". Where she explains that a decision intended to be just cannot be ignorant "concerning current conditions (environmental, cultural, socio-economic, political, and so on)" (Hurst 2004: 14), her mode of speech (writing) implicitly assumes that specific "cultural", "socio-economic" and "political" circumstances may change, but what is presupposed all along is that the changing circumstances under consideration continue to exhibit the property of being (some or other) cultural, socio-economic

concurrent affirmation is made to enduring conditions, making possible all references to relativity and changefulness. The issue of openness in philosophy (as against metaphysical "closure") relates to the problem of uniqueness and coherence, or what might be called the problem concerning "the coherence of irreducibles".

4. Relativity and the modal "seat" of functional terms

At this point we may return to the brief remarks made earlier about the distinction between concepts of things and function concepts (correlated with the distinction between type laws and modal laws), because the problem relating to the coherence of irreducibles translates into the inevitability of recognising the "modal seat" of property and relational terms found in our concrete (lived-through) experience — and the other side of the coin is given in the inevitability of exploring the inter-connectedness between various "primitive" domains.

Within various scholarly disciplines it is acknowledged that the core meaning of the basic terms employed within a particular scholarly discipline are indefinable.[16] But this is not the full story, since the meaning of any primitive domain expresses itself only in its coherence with other (modal functional) domains.

or political constellation/phenomenon. The differences between various instances of cultural, socio-economic or political phenomena do not cancel their belonging to the enduring categories mentioned. Even if there are differences of opinion about what such enduring elements are, some or other of them will still be assumed in speaking about change. Plato came to the insight that change can only be detected on the basis of constancy (metaphysically twisted in his theory of static supersensory ideal forms); Galileo first captured the natural scientific significance of this insight in formulating the law of inertia, while Einstein deepened this by postulating the constancy of the velocity of light in a vacuum in his Special Theory of Relativity.

16 Axiomatic set theory accepts the terms "element of" or "set" as indefinable; the science of pure movement (kinematics) does the same with the idea of uniform movement; the discipline of semantics similarly accepts "meaning" as a primitive term, and so on.

4.1 The analytical and the lingual

This state of affairs also sheds light on the difficulties involved in the attempt to distinguish between thought and language (concept and word). The extreme opposite positions taken in this regard often argue that whoever engages in the activity of thinking automatically activates language and whoever uses language is automatically involved in conceptualisation. These arguments simply state that any concrete human activity necessarily functions at once in the analytical and the sign modes (aspects) of reality.[17] Only after this distinction between concrete activities and their diverse functions has been drawn does it make sense to ask second-level questions about the uniqueness and the coherence prevailing between the two modes[18] and only at this point will it be possible to address the problem as to whether the sign mode presupposes the meaning of the analytical mode or *vice versa*.

Without attempting to address this complicated problem in any detail a mere hint may illustrate the kind of argument involved in resolving the problem of foundation — the question of whether or not the analytic mode is foundational to the sign mode.

Analysis actually embraces the "mutuality" of identification and distinguishing referred to in an earlier context. The meaning of the sign mode[19] is based upon this analytical ability to discern, for without this

17 Implicit in this statement is the idea of ontic modes of reality not only making possible the concrete functions which entities and events may have within them, but also implying that such modes form the (non-subjective, ontic) transcendental reference-point for human reflection about the uniqueness and coherence of the modal functions under consideration. This kind of reflection will always remain provisional and open to future correction and re-interpretation (owing to the very conditions of historicity and linguisticality embracing the on-going dynamics of human endeavours).

18 Fodor (1977: 43) remarks: "The goal we have been pursuing is the traditional one of reducing meaning to some more basic and better understood entity. But analyticity is too intimately related to meaning to provide such a reduction. In fact, as far as anyone knows, there is no meaning-independent way of characterizing either analyticity or meaning".

19 Normally this aspect is known as the lingual mode. Yet there are important considerations suggesting an alternative formulation. The human ability to express meaning and to interpret it is a response to the normative demand to assign

foundational analytical function the user of language will be unable to notice the lingual significance of nuanced sound or different letters of the alphabet.

However, the act of identification entails a bringing together (uniting/synthesising) a multiplicity of traits, which is what the formation of concepts is all about. Since identification and distinguishing mutually presuppose each other, it should be clear that the counter pole of the synthetic act of identification is given in distinguishing — the other "leg" of analysis. Therefore it is mistaken to oppose analysis and synthesis.

The question now becomes intriguing, for it turns out that there is an intimate connection between analysis and concept formation — the synthetic act of identifying a multiplicity of (universal)[20] features captured in the unity of a concept). After the linguistic turn, the automatic claim would be that the formation of a concept is always language bound. A couple of remarks are required:

meaning, to signify. Within inter-human contexts such an expressive assignment of meaning or signification always calls forth the interpretative response of another human subject. Suppose we restrict ourselves to the normative sense of our (human) calling to signify and leave aside whether or not it is done with the aid of verbal language, then it may be justified to refer to this aspect as the semiotic aspect. But other options are also open to us, for we can just as well focus our attention on the subjective acts of signification, in which case the formation of language (and of linguistic structures) acquires a prominent place, apparently once again justifying the designation "lingual mode". Finally, if we focus on whatever is intended by acts of signification in their relation to the meaning of the words, we may designate this aspect as the semantic mode (consider the discipline of semantics that studies the meaning of words). Combining these three options — semiotic, lingual and semantic — while at the same time avoiding the relative one-sidedness contained in each of them when considered in isolation from the others, the entire modal structure of this aspect may simply be called the sign mode.

20 Concepts are always based upon universal properties, which explains why the unique and individual transcends the grasp of concept formation. The implicit but dominant rationalist legacy of Western epistemology identifies knowledge with conceptual knowledge and thus eliminates the possibility of doing justice to concept-transcending knowledge.

- First of all we have to observe that language involves a concrete activity embracing multiple aspects, which explains why it can never be identified with only one aspect (such as the sign mode).
- From the first consideration it follows that any lingual performance functions at once in both the logical-analytical aspect and the sign mode — which once again explains that any such performance will always simultaneously exhibit both functions.

Arguing for the foundational role of the logical aspect is not intended to deny the actual (inter-modal) connectedness prevailing between the logical and the sign aspects of reality. An example may highlight the foundational role of concept formation.

A little girl who first notices a pigeon and learns its name is capable of abstracting from what is concretely given, for instance when she shortly thereafter refers to a shrike as a pigeon. The child has actually formed the concept "bird" but designated it with the name (verbal sign) /pigeon/. This is only possible because from the concrete sensorially perceived image of a pigeon the girl has lifted out certain avian characteristics, a beak, wings and feathers for instance, while simultaneously relinquishing the specific characteristics which distinguish a pigeon from a shrike. Given its foundational role for human functioning, it should not be surprising that the development of logical-analytical skill in the child precedes its lingual competence, for although the concept of a "bird" was at hand, the child, as yet, did not have the matching lingual abilities to properly designate what was analytically discerned, as is seen in the fact that the word used to designate a pigeon is also used to designate the concept "bird".

This example shows that, within the intellectual development of human beings, logical concept formation precedes matching lingual abilities. Viewed from the perspective of modal distinctness and coherence, language use is built upon the basis of logical skills. Another example may be taken from the double negation of the Afrikaans language. It provides quite an interesting example of this foundational relationship. The double negation present in the Afrikaans language generates its own (linguistic) logic, peculiar to this language. It is found that relatively young children (3-5), already displaying a clear sense of logical consistency and logical soundness, answer questions phrased in terms of the double negation with "yes," whereas older children and adults,

who have matured lingually to the extent that they are "at home" with the (apparently "illogical") double negation of Afrikaans, will answer "no." In Afrikaans one may ask: "Is jy nie honger nie?" ["Are you not hungry?"] A young child will answer "Yes", while more mature language users will answer "No".

Another argument in favour of the foundational role of the logical mode lies in considering the normative contraries located in the various functions (distinctively) typical of the behaviour of human beings in comparison with animals. Whereas both animals and human beings are sentient creatures, only human beings evince an accountable freedom (manifested in norm-conformative and anti-normative actions). On the basis of the logical principle of non-contradiction, constitutive of the contrary logical/illogical, we find normative contraries in all the other normative aspects, such as kind and hostile (within the social aspect), legal and illegal (within the juridical aspect), thrifty and wasteful (within the economic aspect), and beautiful and ugly (within the aesthetic aspect).

4.2 Relativity and linkages between distinct domains

Before the brief discussion of the foundational relation between the logical and sign modes, the observation was made that the meaning of any primitive domain expresses itself only in its coherence with other domains. The argument about the foundational role of the logical mode in respect of the sign mode is an instance of the inter-connectedness of two modal domains, because the very meaning of the sign mode reflects the meaning of analysis in the reality of linguistic distinctions. Of course linguistic distinctions do not coincide with the original logical meaning of identification and distinction; they merely analogically reflect this inter-modal connectedness within the sign mode itself. Viewed purely logically, the notion of a square circle[21] is contradictory, illogical. Yet, precisely because the logical and the sign modes are distinct, the possibility of figurative speech renders it perfectly meaningful to speak about a "square circle" such as a "boxing ring". In the linguistic context not all properties of a square or a circle are designated — the only shared

21 Most philosophers do not realise that this example used by Bertrand Russell actually stems from Immanuel Kant (cf Kant 1969: 341). Cassirer (1910: 16) uses a similar example to this one: a "rundes Viereck" (a "round square").

element highlighted in this metaphorical use of the terms "square" and "circle" is that of an "enclosed spatial surface". However, if the words "square" and "circle" within the lingual context brought with them the full scope of the proper logical concepts of a square and a circle, the lingual expression "square circle" would indeed be contradictory. But precisely because the logical and the sign modes are uniquely distinct and mutually cohering, figurative speech and metaphoricity (as linguistic phenomena evinced within the sign mode of reality) are not illogical, nor do they violate any linguistic requirement of meaningful expressions.

In our discussion of the complexities involved in reflecting on the notion of relativity, we have already noted that the term "relativity" refers to relations or connections between relata. At this point of our analysis we may ask: where does one find the notion of relatedness or connectedness in the first place?

4.3 The original domain of the notion of relatedness/ connectedness

Our integral experiential awareness of relation and connection has its foundation in the domain of spatiality, which underlies our human intuition of continuity. Whatever is continuous is connected in all its parts, for any instance of "disconnection" will manifest a hiatus eliminating the coherence between the multiple parts of the connected whole. If all the connected or cohering parts are present, the whole or totality is also given. Therefore the primitive meaning of relatedness is found within the spatial aspect of reality. Any attempt to define the core (primitive) meaning of this aspect results in generating synonyms (as has just been shown).[22]

Locating the term continuity and its synonyms within the domain of the spatial aspect does not mean that these terms are only employed in a spatial sense, because every original modal term recurs in various universes of discourse, such as that of analogical usage. Language reflects such contexts in compound expressions such as logical relations, social

22 When it is said that something continuous is cohering on the basis of multiple connected parts, nothing is said that is not already entailed in the initial formulation of the idea of continuous extension (cf Strauss 2002: 2-18).

relationships, moral ties, and so on. In all such cases, two primitive domains are interconnected.

One may consider, for example, the analogical occurrence of the certitudinal term "trust" within an economic context when credit is discussed. Within the fiduciary aspect (faith aspect) of the term (certainty/to be convinced) one finds its original (primitive) meaning. Although Derrida did not develop a theory of inter-modal connections, he has a clear awareness of the fact that credit interlinks the economic and the certitudinal aspects. His initial remark simply states the presence of "faith" within every society, which suggests the original (primitive) domain of confidence and trust. But when he continues it is clear that he is addressing the fiduciary analogy within the sphere of the economic aspect:

> There is no society without faith, without trust in the other. Even if I abuse this, if I lie or if I commit perjury, if I am violent because of this faith, even on the economic level, there is no society without this faith, this minimal act of faith. What one calls *credit* in capitalism, in economics, has to do with faith, and the economists know that. But this faith is not and should not be reduced or defined by religion as such [my italics, DFMS] (Derrida 1997: 23).

The closing remark that "this faith" is different from "religion as such" highlights the fact that an analogy exists by the grace of both similarities and differences: although both religious faith (trust) and economic faith (trust) are built upon the similarity given in the element of trust, this very element of similarity brings out the difference, since religious trust (faith) is not the same as economic trust (credit). Within the moment of similarity the difference is shown — a phrase which actually defines the nature of an analogy.

If we return to the domain in which the terms relativity and relatedness have their original seat, namely the modal aspect of space, then a problem arises similar to that concerning the relationship between concept and word (or: the functional interrelationship between logical discerning and lingual designating). In our concrete experience, multiplicity and extension (spatial form and shape) are always given at once. The chair on which I am sitting while writing this argument has a certain (fairly comfortable) spatial configuration but at the same time evinces quantitative properties (such as being one item of furniture and having four legs). Although identifying and distinguishing

these aspects appears fairly easy, it is not as simple to account for the order relationship between these two modal functions of reality.[23]

4.4 The interconnection between primitive domains

Because intuition can grasp continuity all at once, Fraenkel mentions that "Greek mathematics and philosophy were inclined to consider continuity to be the simpler concept" (Fraenkel *et al* 1973: 213). Yet, the obviously analogical appearance of numerical terms within an analysis of the meaning of space suggests, rather, that the quantitative aspect is foundational to the spatial aspect. Whenever spatial dimensions are considered, number is presupposed, for one may speak about one, two, three or more dimensions — thus analogically reflecting the coherence between the spatial and the numerical aspects. Similarly, there are spatial magnitudes specified in accordance with different dimensions. One-dimensional extension is designated as length, two-dimensional extension as surface, three-dimensional extension as volume, and so on.[24]

It should be noted that a distinction must be drawn between "aspect analogies" and "entitary analogies". Dimension and magnitude are "aspect analogies" whereas speaking about "the nose of the car" is a metaphorical designation of similarities between two kinds of entities (a human being and a car). Modal analogies are irreplaceable (except by synonyms), while metaphors may be replaced by totally different ones. However, in order to explain the meaning of an aspect itself the use of metaphors turns out to be unavoidable. An aspect may be seen as a point of entry (a metaphor): one may refer to an aspect as an angle of

23 I have argued for an acknowledgement of the ontic status of these aspects in Strauss (2003).

24 A straight line therefore cannot be defined as "the shortest distance between two points" because distance is merely a numerical analogy within the aspect of space used as a measure for the original spatial extension of the line. The continuous extension of the line is indefinable — explaining why Hilbert had to introduce line as one of his three undefined terms (the other two are "point" and "lies on"). In the third volume of his *Gesammelte Abhandlungen*, Hilbert (1970: 302) correctly introduces the problem of the straight line as the shortest connection of two points ("[Das] Problem von der Geraden als kürzester Verbindung zweier Punkte").

approach (another metaphor), as a gateway to reality or as a vantage point (both also metaphors). In all these cases analogies between entities are explored with the aim of helping us to come to a better understanding of the meaning of modal aspects. Therefore, while the modal aspects of reality mediate our experience of the functioning of concrete (natural and social) entities and events, the dimension of entities and events opens up the possibility of coming to a metaphorical account of the nature of the various aspects. Cognitively and linguistically there seems to be no way out of this "cross-fertilisation" — it is primitive and it (reciprocally) conditions our understanding of reality.

Having briefly indicated that the meaning of space inherently reveals its inter-modal coherence with the (foundational) numerical aspect, it should be pointed out that the reverse is also true: the quantitative meaning of number reveals its connection with the meaning of space in various ways. The idea of the "continuum" is particularly striking in this regard.

According to Kneale (1962; cf Hart 1984: 115), complications are encountered in the attempt to express mathematical continuity in numerical terms. A co-worker of David Hilbert, the mathematician Paul Bernays (1976: 74), emphatically claims that "the idea of the continuum is a geometric idea which analysis expresses in the language of arithmetic". More recently Lakoff — with reference to Weyl's work on the continuum (cf Weyl 1932) — asks: "Why does mathematics have to understand the continuous in terms of the discrete?" (Lakoff & Núñez 2000: 323).

In the absence of a theory of modal functions (aspects) it is understandable that such thinkers want to interpret the inter-modal coherence between number and space exclusively in terms of metaphorical mappings. Lakoff & Núñez (2000: 324) write:

> Indeed, it is an attempt to understand one kind of thing — the naturally continuous continuum — in terms of its very opposite — the discrete. We find it strange that it should be seen as a central task of mathematics to provide a metaphorical characterization of the continuum in terms of its opposite. Any such metaphor is bound to miss aspects of what the continuum is, and miss quite a bit.

From the perspective of modal analogies the meaning of the numerical aspect (under the guidance of theoretical thought) can be deepened and disclosed by analogical references pointing towards the (irredu-

cible) meaning of space. This deepening of meaning presupposes an ontic coherence between two irreducibly unique modal aspects, which is not the result of either theoretical thinking or the construction of appropriate metaphors. The idea of what should preferably be called the at-once-infinite (traditionally known as the actual infinite) attempts to account for the connection between number and space from the perspective of number. In terms of this any successively infinite sequence of numbers can be viewed as if it is present at once as an infinite totality. But this deepened meaning of infinity is not a metaphor; it is an inter-aspectual (anticipatory)[25] structural connection between these two aspects.

It is not accidental that relativism is frequently connected with the idea of flux and incessant change. When any and all forms of normativity (or values — as it became fashionable through the influence of the neo-Kantian Baden school) are inherently subject to alteration and change, the (self-contradictory) relativistic claim that there are no constant standards naturally follows. Apart from the destructive influence of modern historicism, this crucial element of relativism entails a self-destructive consequence.

Before we look at the (onto-)logic of relativism we have to point out that dynamics and change lose all meaning outside their coherence with something constant. Galileo's thought experiment (mentioned in connection with Kant's elevation of human understanding to the level of an *a priori* formal law-giver of nature) resulted in his law of inertia. Einstein deepened this insight by postulating the velocity of light in a vacuum in his Special Theory of Relativity. The chosen name is misdirected, because the basic assumption of Einstein's theory is given in the order of uniformity found in the velocity of light — and whatever moves is moving relative to this constant.[26] We have noted

25 When an aspect is foundational to another aspect one finds anticipatory analogies within its structure, and retrocipatory analogies within that of the other. Lingual distinctions represent a retrocipatory analogy through which the sign mode refers to the (foundational) logical mode, while economic trust manifests an anticipatory analogy to the fiduciary aspect within the economic aspect.

26 Einstein (cf 1922: 31ff) frequently mentions the "Prinzip von der Konstanz der Lichtgeschwindigkeit". In his autobiography he emphasises the fact that it must be in a vacuum: "der Konstanz der Vacuum-Lichtgeschwindigkeit" (Einstein 1959: 54).

that the historicist *Zeitgeist* of the early twentieth century apparently tempted Einstein to speak about a theory of "relativity" instead of a theory of constancy.

But it is not only Einstein's Theory of Relativity that suffered from a misapprehension of the inter-modal connectedness of the kinematic aspect of uniform (constant) movement and the physical aspect of energy operation, since the first main law of thermodynamics may also benefit from this insight into the foundational role of constancy for all discourses focusing on change. Formulating it as the law of energy constancy directly unveils the kinematic retrocipation (retrocipatory analogy) within the structure of the physical aspect (to its law side).[27]

5. The (onto-)logic of relativism

We are now in a position to assess the (onto-)logic of relativism. In general one may say that relativism does not do justice to the relativity of flux (change). The meaning structure of change only comes to expression in the coherence between the physical aspect (where the term change finds its original "modal seat") and the other aspects of reality (among them the foundational kinematic aspect). As an effect of the order relation entailed in the connection between the kinematic and the physical aspects, the following may be said:

> Without constancy that is foundational to change the latter is impossible, and outside the constant structure of the physical aspect itself (physical) change is also impossible because then it is robbed of its original modal meaning.

One may broaden the perspective by stating that whatever is chosen to be merely changeful loses its meaning the moment an attempt is made to conceive it in isolation from the coherence of meaning within which it is fitted in reality. Therefore change can never be appreciated apart from its coherence of meaning with other (non-physical) aspects of reality.

27 Within each modal aspect there is a strict correlation between its law side and its factual side. The former conditions and determines the latter. Laws are universal. Whatever exists factually displays at once a universal side (its orderliness or law-conformity) and an individual side (its concept-transcending uniqueness).

The relativist is guilty of denying the relatedness (or relativity) of flux and change. The irony is that instead of successfully relativising (all of) creaturely reality, relativism is only possible by reifying (or absolutising) something within reality. In so doing, it achieves the opposite of what it initially aimed at. In the urge to relativise in a radical sense the relativist invariably ends up absolutising something within reality.

Historicism shows this in its (relativistic) belief that all of reality is intrinsically subject to historical change. Everything (legal concepts, moral standards, convictions of faith, and so forth) is simply subject to the ever-flowing stream of emergence, acme and decline. Yet the first question to be directed at historicism is whether or not, in this picture, any grounds remain for speaking about something like legal history, religious history, or economic history? One can only talk meaningfully of legal history, economic history, and so on, because both a historical and a juridical (or economic) aspect exist within the diversity of reality. Since law is not history, it cannot have a history. If everything is history, as the historicist claims, then nothing remains that could have a history. This is the *cul de sac* of historicism (and of every *ism*): that which is exalted as one-and-all loses all meaning, since, if everything is history, there is nothing left which can have a history. Ultimately every one-sided *ism* produces a tragic irony: it always achieves the opposite of what it aimed for!

Taking the ontic diversity within reality seriously — in its coherence of what is unique — precludes in a positive way the absolutisation of change which is so dominant in relativism. One should not therefore attempt to side-step the relativistic consequences of relativism merely by postulating something else within reality as absolute, because the integral coherence of meaning found within reality will constantly resist such attempts to absolutise anything creaturely.

We are confronted with the "meaning character" of reality itself, which can only be approximated in concept-transcending ideas. The correlativity of the numerous irreducible (modal) terms ought therefore to be acknowledged within the different primitive domains of reality in which they find their irreducible seat. Modal aspects provide access to modal terms that may be employed in two ways:

- to refer to functional states of affairs (or events) functioning within their confines, or

- specific modal functional terms, to refer thought beyond the boundaries of the aspect under consideration, to that which transcends the limits of that aspect.

One may designate the former as conceptual usages and the latter as concept-transcending ideas (in German: *Grenzbegriffe*). The possibility of speaking about individuality is twofold. It is made possible by concretely existing entities transcending our conceptual grasp, and it rests upon a concept-transcending use of the original numerical awareness of being distinct. Similarly, the term "universality" cannot deny its spatial descent, although in using it we are referring to a trait of concretely existing entities (albeit a universal feature). Therefore the modal seat of the four terms individuality, universality, constancy and dynamics (change) is founded, respectively, in the quantitative, the spatial, the kinematic and the physical aspects of reality. When employed in a truly concept-transcending manner these terms are embedded in the four most basic concept-transcending statements that can be made about the universe:

- everything is unique;
- everything coheres with everything else;
- everything is constant, and
- everything changes.

Because these statements are derived from irreducibly cohering modal points of entry, they are not contradictory even though they may be simultaneously affirmed with reference to all of reality.

Discreteness and continuity are therefore no more opposites, as Lakoff & Núñez (2000: 323-4) claim, than constancy and change are opposites. Opposites derive from the same core domain of irreducibility. The quantitative aspect facilitates an awareness of the opposition between few and many. Within the meaning of the spatial aspect one may speak about opposites such as close or far away (or their analogies in other aspects such as when one looks at the State President and his bodyguard, who are close in terms of spatial distance but far apart in terms of social distance). Fast and slow, or strong and weak are also true (intramodal) opposites. Within the logical and the post-logical aspects[28]

28 That is, within those aspects that are founded in the logical aspect (and the principle of non-contradiction).

opposites such as logical and illogical, legal and illegal, and so on (as we have remarked) are recognised as normative contraries. Irreducible modal aspects do not "oppose" each other but mutually constitute the incredibly rich diversity and coherence of meaning embracing them all.

6. Reifying the accountable freedom of humankind

Since Kant, the entire constructivist project has rested on the subjectivist starting-point of nominalism and, in fact, merely reified humanity's accountable freedom to give shape to underlying (ontic) principles in various (historically changing) circumstances. This orientation rests upon the ultimate commitment to the ideal of an autonomously free human personality, setting the law for itself. Rousseau (1966: 16) had a solid awareness of this starting-point: "Freedom is obedience to a law which we prescribe to ourselves".

7. Concluding remark

Entering into an analysis of the modern idea of autonomy, in its relation to the problems involved in reflecting upon the normativity of life, deserves a different treatment altogether. Therefore it will suffice to conclude by summarising the basic thrust of our argumentation here.

While fully acknowledging the fact that humankind is co-conditioned by its historicity and its linguisticality, accounting for our awareness of the provisional nature of scholarly insights and other (non-academic) practical endeavours, and the fact that interpretations are bound to be tested and often transformed by new ones, this discussion has tried to show that a genuinely relativistic stance achieves the opposite of what it aims for, since it invariably results in the (antinomic) absolutisation of something relative. Relativism is unable to account for the overwhelming (concept-transcending) coherence of meaning within reality.

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