

Philosophy and Its Place in the Space of Western Spirituality: An Apology

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... night is falling – Minerva's owl is taking flight
G.W.F. Hegel

Philosophy never has been and never will be a science. Nevertheless it is a body of knowledge: knowledge of the subject by the subject. A field of autonomous being, the subject's ontic foundation is knowledge of self. A non-spatial field of absolute reflexivity, the autonomy of its being establishes the presence of freedom within cosmic space. We may forget Pythagoras' theorem learnt at school, but philosophical knowledge never falls into oblivion.

The sun's journey across the firmament

What today we call western thought, western mind or culture, is neither a geographical concept nor an ethnic definition. The idea of the West no more corresponds to a territory than it does to an ethnic group.

Ex oriente lux: the light – and the luxury – of the West were brought to us by a young princess from the Phoenician East who was abducted by Zeus. She was beautiful, she bore the Semitic name *ereu*, *Europa* – sunset, *occidens*, nightfall – *night*, when *Minerva's owl takes flight*.

According to period, the centre of gravity of what is today called the 'West' was situated in very different geographical zones. We call western mind, as a short form, something that travelled along a most strange route. It will be enough to remind readers that between 800 and 1300 AD what we now call *western thought* was chiefly represented by mathematicians, doctors, architects and philosophers who expressed themselves in Arabic. The first European mathematicians, between the 9th and 13th centuries, were followers of Arab authors. The great movement of neo-Platonist

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SAGE: Los Angeles, London, New Delhi and Singapore, <http://dio.sagepub.com>

DOI: 10.1177/0392192107086523

thought owes its emergence to the intrusion into Greek space of ideas and authors from the East. Averroism is an element of western thought as inalienable and essential as Thomism or Spinozism. The idea of a last judgement comes to us from Iran, belief in a life after death from Egypt, monotheism and Christianity arose in the East. The idea of a legal state made its appearance with Hammurabi, the famous penal prescription *an eye for an eye* can be found in his code as an expression of the equitable balance between crime and punishment. Western thought is a great river formed by tributaries from everywhere and its waters flow into all the oceans.

However, from the viewpoint of its spiritual autonomy what we mean by the term 'western thought' has certain distinctive features that make it specific and unique. Two of these many specificities seem to me especially capable of representing what people call western spirituality: musical polyphony and social criticism. It is this second aspect that we shall focus on here.

Criticism, or rather social and political self-criticism and the ideas strictly associated with it, like self-consciousness, the idea of the freedom and universality of the subject, combined with the absolute reflexivity of the Ego, are the fundamental parameters that continuously determined the diachronic path of western thought through its history.

Social criticism, or the Ego's self-criticism

The verb *to know* necessarily becomes reflexive when it concerns society: society knows itself of necessity through self-knowledge, and via knowledge of society the subject knows itself.

Social criticism is always a self-criticism of society – just as the *Critique of Pure Reason* is a self-criticism of pure reason: by examining itself *pure reason* is revealed to itself and becomes aware of its own constitution. And when the subject of cognition concentrates its gaze on the object we call 'human society', it is that society which obeys the mythical imperative so often quoted by Socrates: *know thyself*. The divine criticism of humanity which is spread throughout the pages of the Old Testament is the inexorable self-criticism of human beings.

As an essential dimension of western thought social criticism represents a self-criticism of the subject of history, and so, a manifestation of the subject's absolute reflexivity; it brings the subject an increase in crucial knowledge in its continual effort to answer the question: what is man? By this act of becoming aware, by the absorption of this new knowledge, the subject is enriched, expands, becomes something else, transcends itself: self-consciousness becomes the ontic foundation of its being and its truth. This act of becoming aware – the act that is reflexive par excellence – defines the particular specificity of the place occupied by the human in the ontic field of life, the universe and being in general.

The subject is the ontic field of absolute reflexivity. According to Jakob Böhme it is both the mirror and the eye, the object and its image. But social criticism is manifested in the order of intersubjective existence and through the articulation of oppositions. The tenacious, indestructible permanence of opposition, an opposition less concerned with little princes than with great moral and political principles, this is

one of the most significant of the specific and unique features of the West's history. In the form of an opposition social self-criticism becomes one of the most important factors in the self-realization, strengthening and vitality of the West.

It has never been possible to eliminate opposition from the West's history, nor to silence dissension; always, even in the most severe, most terrible times, voices have been raised to say *No!* to injustice, *No!* to infamy. *The rebel, the man in revolt* is the one who says 'no!' – the Ego of negativity.

The Inquisition was a product of the West. But opposition to the Inquisition was also – and I would say: of necessity – created by that same spirit of the West, and it eventually vanquished the Inquisition. Even within that institution, with its pitiless hierarchy based on absolute obedience that is the Church of Rome, opposition has never ceased to be present. Was colonialism not created by the spirit of the West? Of course it was. But anti-colonialism is also an organic product of the West. The Dominican father Bartolomé de las Casas, author of a *Relación sobre la destrucción de las Indias*, and Bishop Vasco de Quiroga, were both members of that Spanish 'establishment' that subdued and colonized Latin America.

Is capitalism not a phenomenon specific to the West? Without a doubt it is. But the most determined anti-capitalism is also an immanent product of the West. Here is a little family story: in the early 19th century 'Uncle Philips', Karl Marx's maternal uncle (the sole person, apart from Friedrich Engels and Heinrich Heine, whom Marx treats with respect in his correspondence), arrived in the Netherlands from the north of the Kingdom of Hungary and settled in Eindhoven, opened a modest electrical workshop and created his capital there by setting up the Philips concern. From time to time he would send a bit of money to his badly-off nephew, whom he was very fond of, who was writing his *Capital* in London and setting up the First Socialist International. An anecdotal curiosity? One of history's ironies? No, it is the most profound essence of the West, an anecdote emblematic of the immanence of self-critical reflection and the inevitable presence of opposition within the western mind.

Absence of disagreement and opposition brings stagnation, degeneration and decrepitude. Without constant self-examination, without pitiless self-criticism, society unavoidably falls into a state of deadly somnolence. *Reden ist Leben, schweigen ist Tod*. When we look back at the past we realize that it is only thanks to that uninterrupted effort to know itself, thanks to the implacable operation of self-criticism, that the West managed to overcome all the crises that marked its development, managed to save itself and recover its strength and vitality – in a word: *transcend itself, preserve itself and rise up* to reach a more complex, higher and more viable state. The existence of a political opposition – the expression of self-criticism of the transcendental subject of society – recognition of its legitimacy, consciousness of its necessity: this is a specific and fundamental dimension of western thought and political life. Curiously that guiding idea of the West's political thought was formulated – in clear and categorical terms that carry no ambiguity – in an article in the *Rheinische Zeitung* of 14 July 1842, and written in Paris by a *Young Hegelian* – still very young – Karl Marx: *Ohne Parteien keine Entwicklung, ohne Scheidung kein Fortschritt* – without parties no development, without dissension no progress. A fine aphorism whose truth has recently been confirmed by the irreversible collapse of the monolithic dictatorships that claimed to follow its author.

History, the autonomous movement of the subject

The idea of social criticism, accompanied by the idea of freedom and universality, made its appearance in the western area that is the Mediterranean with the Jewish prophets and Greek philosophers.

In the prophets' view morality imposes its universal, divine laws on the whole of humanity. It is humanity as a whole that lives in sin. At the start of human history God, who was angry at seeing humanity sink into sin and evil, regretted having created it and decided to annihilate it.

Plato was the first thinker to offer us a radical, explicit critique, not of the people in possession of power but of the democratic system of the *polis* in its totality and unity. He was also the first to suggest the utopia of a society without private property, governed rigorously by philosophers and philosophy.

It was the Old Testament that for the first time brought a universal vision of the human race: the idea of a universal human, a humanity seen in its historicity, in its evolving and ascending movement. Then for the first time Aristotle gave that universality a central place, a dignity of the highest degree in philosophical thought: *catholicity*, τὸ καθόλου is a sign of truth and ontic necessity. As in Greek thought, people became aware of their political being, in the Old Testament we see the subject becoming conscious of its *historical being*. In the subject ontic field and historical being are coextensive. The subject is an active agent. It is both the subject and object of the diachronic movement of history.

Like the paths of God, the geodesics of history are tortuous, abstruse and more often than not incomprehensible. The constant effort to understand and decipher those lines of force, imposing at the same time a structure on the procession of events, is nonetheless one of the western subject's strongest diachronic invariants. Basically it is what we know as the *historicity* of the human being.

The subject: being of knowledge, knowledge of non-being

Nature *is* – and that is all she knows: to *be*, nothing else but to be. In order to *be* the universe does not need to *be known*. No matter whether a cognitive subject is present in the universe: the universe exists, it remains in the instant of the eternal present, without knowing itself.

'Being' is probably a great plus already, but it is not the supreme essence of things.

What's in a name? When Juliet speaks the name of the rose she probably has knowledge about the rose. But with the rose Juliet is also part of the Universe; implicitly her knowledge is part of it too. So of necessity it is the Universe that – in that ordinary cognitive act – knows itself, embodied in the hypostasis of the rose.

Knowledge is superior to being because knowledge knows being but it also knows non-being. Among the *Mauvaises pensées* (Bad thoughts) that Paul Valéry brought into the world one of the worst is certainly the following: *Particular, unique object of thought: What does not exist.*

To know non-being: that is the mark of the absolute singularity of man in the Universe. To know non-being means to know oneself, for the place of non-being is

within the subject, it is there within the epistemic domain of knowledge and nowhere else, it is there in the ontic modality of the *being-known*. And according to the *Peri physeos* by John Scot Erigena, Charles the Bald's confessor convicted of heresy, it is the whole of being and non-being that makes the divine All: only God is All, the all that is and the all that is not – *omne quod est, & omne quod non est*.

The subject knows being: the Universe knows itself. The subject knows non-being: the Ego knows itself, it knows what is not found anywhere in nature but solely within itself and only here: beauty, freedom, love, justice, four-dimensional cube, irrational, imaginary and transcendental numbers, Centaur, Pegasus, Minerva, Unicorn and, probably above all, time.

The subject knows good and evil, which exist only in him, which have no existence outside the subject but nonetheless represent realities harder than stone: their implacable existence is guaranteed solely by the knowledge that the subject, and it alone, possesses. Angela Alès Bello is therefore right to maintain that *evil is ontological*, it is an existential element of the Ego which is conscious of itself as the sole source of evil in the universe.

The subject knows the past and the past is past, it does not exist. 'To be past' means: not to be. And yet, as Sarah Smith said to me one day: *nothing is more present than the past!* To be present the past needs a subject who knows it. What is *past* is *present* – present in the subject, within and only in that impalpable interior of the subject. In his *Stromata* Clément quotes these words of Parmenides of Elea: ἀπεόντα νόωι παρεόντα βεβαίως – *through the mind absence is present with an unshakeable firmness*.

The ontic modality of time is that of *being-known*. When the subject knows the past he knows himself, he thinks of a non-being that does not exist anywhere else than in the privacy of his present thought. Memory is the natural force that preserves the past in the domain of the eternal present and includes it in the world of present knowledge. All memory is a Presence, Novalis said.

In the diachronic space of *Historia* the material essence of what has been, the Event, shows itself and appears as the presence of that non-being that is the past. The immaterial essence of what has been is its knowledge, the memory which the subject now keeps of it within herself. And of course it is the subject, and none other than the subject, who assigns a new reality to the past, to what has been but now is not; it is the subject who places it in the eternal present by which the past comes into motionless eternity, indestructible and irreversible. The present passes; the past never passes, it is the only thing in the Universe that never changes, is preserved and remains unvarying for all eternity.

The historicity of the human race, the existential fact peculiar to the western condition, is ontologically rooted in the transcendental subject's absolute subjectivity. Only the subject has a past, only the subject has a history. The subject's presence is the presence of time in the Universe.

In me, and nowhere else, time *is* – the future with those sea battles that will or will not happen tomorrow at Salamis, with all its contingent futures; the past with its dinosaurs, its long-ago ladies, its sovereign princes, its kings, its emperors, with its stars that are born in a huge explosion here and now, before my very eyes, in a past thousands of millions of years ago.

The *past* is *present* – it is present now in the subject, within and solely within the

subject, a subject who is part of the Universe. 'There does not exist anywhere in Nature something like an *objective* or *absolute* time', wrote Georg Cantor in his revolutionary work on the *Founding of a Theory of Transfinite Numbers*. In a famous 1950 publication dedicated to Einstein, Kurt Gödel argued for the same idea.

The ontological foundation of time is pure subjectivity, knowing oneself. Paraphrasing a saying of Master Eckhart's, quoted below, we could therefore say: 'If I did not exist, "Time" would not exist either.'

Time is the *cosmic manifestation* of the Ego. Through the knowledge of time absolute subjectivity is raised to the level of a dimension of being. With the Ego the Cosmos gave rise to its clock, its beating heart.

The Ego, centre of the Universe

But at least the present is the same and identical for the totality of the whole Universe. Time, the *vñv* is synchronous in all the regions of space. For all observers the verb *to be* already implies within it the strictest simultaneity of all places and all observers in the Universe. *The present day is unique and everywhere the same* (ταὐτὸν ἄμα πολλαχοῦ), *time covers us all together*, like the sail of a yacht unfurled above us, said Parmenides in Plato's *Parmenides*. Is it not obvious? *Perhaps*, replies Aristotle the Younger. In fact it is no longer so.

According to one of the postulates of the Theory of Relativity, simultaneity does not exist. It has no objective meaning. Temporal simultaneity exists only in relation to an inertial system of reference – an observer – identical to the cognitive subject. Two strictly simultaneous events in relation to an observer are not simultaneous in relation to another subject.

The universe is an infinite sphere whose periphery is nowhere and whose centre is everywhere – is what we read in a text by Alain de Lille, edited in 1965 by Marie-Thérèse d'Alverny. A surprising and strange assertion which tradition says goes back to *Pimander* by Hermes Trismegistus. Well, it is not hard to recognize in the words of the divine Hermes the basic postulate of the theory of relativity: the Universe has no special referential system, no absolutely still centre that might serve to define and determine a supposedly absolute speed of movement. The centre of the Universe is everywhere where there is a system of reference, an observer, equivalent to any other. It is neither the Earth nor the Sun – it is Man: the centre of the Universe is the subject. The subject, every subject, is the point of origin of an inertial system of reference which all the events in the Universe are related to. Wherever it is, it is the Observer, the Ego, that is at the centre of the Universe.

Whether we like it or not we are all at the centre of a world whose spherical envelope surrounds us. Everywhere and at all times it is 'now', yes, but their synchrony is valid only in relation to the observer representing an inertial system of reference (a system in repose or moving in a straight line at a constant speed). In the firmament we see a sun *now* which is in an 8-minute past, and immediately next to it and simultaneously we see a star that is situated in a past a thousand or several million years old. The past spreads out before our eyes like the landscape around us. And as an accompaniment we hear simultaneously a very faint but very insistent

background buzz coming continuously from every direction: the evanescent sound emitted ten thousand million years ago by the gigantic explosion that – until further notice – created our Universe.

If we had telescopes powerful enough to turn the points of light into television images, we would see on a screen the life of a star as it was a millennium ago and on a screen next door, and simultaneously, a report of events that were taking place some millions of years ago on another star – we see and hear all that *vôv*, now, though the source of some of the messages may have been wiped out in the meantime.

Before our eyes *now* the celestial spectacle is unfolding of different pasts, which are all *simultaneously* present in the cognitive subject's knowledge: as brought to the subject on earth the 8-minute past is synchronous with the past of millennia and thousands of millions of years. For another subject, at the origin of another system of reference in the Universe, the simultaneity of pasts will give, *now*, another synchronous image. In relation to the observing subject different pasts are present *now* and juxtaposed in the perfect simultaneity of the indivisible instant. As for the ontic foundation of the time dimension, the only ontological foundation of the synchronism of physical events is in the subject.

Today subject, knowledge, mind become existential components of being. The subject is woven into the close texture of the Universe. It becomes a cosmic phenomenon like the stars, the galaxies, light and gravity. The Ego turns into a cosmic factor of the world, transcendental but no less real. Knowledge becomes a cosmic substance.

No subject without time, no time without a subject. Without a subject the Universe would have no past: the subject and only the subject has a past present in his consciousness. Physical time is the result of that act, as banal as it is extraordinary, by which the subject becomes conscious of the past. Time represents the consciousness of the subject's presence within the Universe. With time the subject gives the cosmos a fourth dimension.

The difficulties that accompanied understanding of the relativistic World's fourth dimension, introduced by Minkowsky, can finally be reduced to the difficulties encountered by the comprehension of the Ego. The *world*, in Minkowsky's sense, is the universe occupied by an observer, a subject who contemplates his object from outside, like a billiard ball. But the cosmic sphere is not a billiard ball, it encloses its observer. The Universe contains its knowledge, it is the Whole, the totality of what exists, which contains itself as its own element in the hypostasis of being-known: it is Being in the ontic modality of absolute reflexivity.

Like God in the magnificent poem *Alpha et Omega* by Hildebert de Lavardin, bishop of Le Mans, the transcendental subject, the Ego, is both inside and outside the World that is his: *intra totum non inclusus, extra totum non exclusus*. The paradox of the Ego did not escape Pascal's attention: *By space the universe contains me, by thought I contain/understand it*. It is in essence Russell's famous paradox of *the whole of all the unreflexive wholes: reflexive whole if it is unreflexive, non-reflexive whole if it is reflexive*. The subject is of necessity the source of all logical paradoxes. It is the very site of the logical paradox within the Universe.

The Ego refuses to submit to the tyranny of logic. It is completely incompatible with logic. With the subject, reflexivity and paradox come into the world as a cosmic

phenomenon as natural as gravity, magnetism or electricity. What we call paradox is not in itself paradoxical at all, it is the natural, ordinary state of the Ego, thus of the ontic domain of pure reflexivity. The Ego is the natural space of logical paradox: it is paradox itself. A hell for logic.

Too bad for logic! The Ego's incompatibility with logic demonstrates only that – despite the programme of the powerful analytical line of thinking – pure Reason is irreducible to logic. And though it may be the largest consumer of logic, the Universe of mathematical knowledge is perhaps the most appropriate witness as to this irreducibility. The frontiers of logic are far too narrow and very far from the infinitely more comprehensive and wide borders of Reason; logic is not coextensive with Reason.

Creation of Man and self-portrait of God

For the first time in humanity's spiritual development the Judeo-Christian vision gives the world a transcendental subject called God. A unique and strange invention, one God – the single subject of history, past, present and future, transcendental, universal and supreme subject: *For Thine is the kingdom, the power and the glory*. The Bible is the first book to contain the idea that humanity is unique, as is its history. There are universal moral laws, the same for all humanity. Among those laws one of the most important, if not the most important, says that human life is sacred. The idea of the universal, *catholicity*, is at the basis of Christianity. It was passed down to the world by the words of the Apostle Paul: *I am a Jew among Jews, I am a Greek among Greeks*.

The idea of the freedom of the individual and that of social justice dominate Judeo-Christian thought. This is the true meaning of *the love of God* in the prophet Isaiah's interpretation: *to break the chains of injustice, undo the link of all the yokes, send away free all those who are oppressed; then share one's bread with the hungry, welcome into one's home the unfortunate homeless, clothe the naked*.

God created man free. In his freedom man dared to disobey the divine ban and pick the fruit of the tree of the knowledge of good and evil. The story is well known: he was thrown out of paradise and condemned to freedom forever. Free to choose between good and evil, yes, but that freedom must be paid for. Its price is very high and is called *responsibility*: each individual is personally responsible for their own choice. In Greek thought the individual is conceived of as a free citizen of the *polis*, a community based on a democratic constitution created by that community, where each member is a free individual participating in the collective work of improving society. *Man is by his nature a political animal*: this definition of Aristotle's says that man is a being who by nature makes explicit, develops and realizes his essence in the context of the *polis*. But the *polis* itself is the product of man. The classic definition Aristotle gives of the human being is a crucial moment in the diachronic movement of western spirituality: it is the moment when people become conscious of being political animals and that self-consciousness is embodied in the *polis*.

On the long path of thought that has brought the human mind even further, in particular to awareness of its own freedom, the thinking devoted to interrogation of

the subject by the subject plays a crucial part: *what is a human being?* Indeed, what does it mean 'to be a human being'?

The question is not a new one. Its oldest occurrence, to my knowledge, appears in the Psalms of David 8: *what is man, Lord, that thou art mindful of him?* A question whose immanent drama bursts forth like a cry in the polyphonic interpretation Heinrich Schütz gave it. The first response to the question *what is man?* has been handed down to us by the same Testament. It is no less dramatic: *dust and ashes*. It expresses awareness of his insignificance, which was to be stated shortly afterwards by these disturbing words by Pindar: *shadow of a dream, that is man* – σκιάς ὄναρ ἀνθρώπου.

Know thyself – that legendary phrase, invoked more than once by Plato, has become the reiterated epigraph of philosophical speculation. *By proceeding to this examination*, Plotinus reminds us, *we are obeying the invitation of God, who requires us to know ourselves*. Human beings' effort to know themselves therefore demands, according to Plotinus, their elevation towards knowledge of God – it responds to a divine commandment. So that effort corresponds to a certain need, a need immanent in the movement of the mind throughout its history, a need that gives an internal logic to the mind's development in western thought.

But the same Testament also gives another answer. Yes, man is just dust and ashes and yet this nothingness that is man is the image of God. Man the image of God! But what image? The reproduction of what? God has no face! The Renaissance marks the absolutely decisive moment for western thought: the subject becomes aware of what it means *to be God's image* – an image he has carried in him since his creation but whose nature and power he was unaware of.

In quoting words by the author who hid behind the name of the god Hermes, Cardinal Nicholas of Cusa was trying – in his *De Beryllo* and a 1463 letter to Nicolaus Albergati published in 1955 by Gerda von Bredow – to decipher the true sense of the biblical words: *Adverte Hermetem Trismegistum dicere hominem esse secundum deum*. Indeed, just as God is the creator of real beings and natural forms, man is the creator of beings of reason and artificial forms. These are reproductions of his intellect just as God's creatures reproduce the divine intellect. *Ille imitari potest Deum*. In his *Periphyseos* John Scot Erigena characterized divine intelligence or omniscience in these words: 'for only the cognitive virtue of God, *gnostica virtus*, knows all even before anything exists – *priusquam essent omnia*. God is everything true, *ut ait Sanctus Dionysus Areopagita*: 'affirmation of negation, comprehension of the incomprehensible, access to the inaccessible, body of the incorporeal, form of the formless, measure of the incommensurable, number of the numberless, vision of the invisible, place of the non-local, time of atemporal'.

The example Cardinal Nicholas of Cusa offers us in his trilogy *Idiota* (*Idiota de sapientia*, *Idiota de mente* and *Idiota de staticis experimentis*, 1450) is of an uneducated person who makes a spoon from a bit of wood: the spoon does not appear in the inventory of the things God made emerge from nothingness during the 6 days of Creation, it has no model pre-existing in the world which it could have reproduced. It is a non-being that was at the beginning, but a non-being known by the subject. It is a non-being of which there is a knowledge. That non-being is present within the subject. The knowledge of the non-being that is the spoon precedes its being. The subject, the intellect, therefore has priority relatively to its object.

Our *spiritus intellectualis* was not put into the world for anything else, *missus est a Deo in terram non per aliud*, except to spread like a flame – *nisi ut ardeat et crescat in flammam* – to continue the work of divine creation with the constant creation of things that neither God nor Nature produces.

It is true that people had made spoons for millennia before Cusanus's *Idiota*. But awareness of the fact that, in performing that ordinary art, people are imitating God by continuing the work of creation, that crucial growth of knowledge, is affirmed there in Nicholas of Cusa's texts. The fact that the ontic foundation of *being-spoon* is inside the Ego is not ordinary knowledge like knowing how to make the spoon; it is transcendental knowledge, knowledge for which the manufacturing artisan is infinitely more important than the thing manufactured. The new knowledge is not to do with either the spoon's structure or the manufacturing process, it is a knowledge with a radically different epistemic constitution and intention. The growth of knowledge thus achieved involves the subject alone, the Ego. This vision of human beings, the subject's consciousness of itself, was entirely new. In his commentaries on Aristotle's *Metaphysics* Jean Tricot showed that *the idea of creation, that Judeo-Christian idea, was completely alien to the Greek mind*.

The idea of *homo secundus deus* spread out in every direction. It acquired the ontic status of *social existence*. Henceforth that idea is present more or less everywhere and is absorbed by everyone, mathematicians as well as artists. It is present in Cardan, who applies it to mathematical objects: *for geometry as a science is only the knowledge of what the mind itself creates, and this knowledge is a definite truth since the mind thinks it so*. It is explicit in Leonardo who, in his *Treatise on Painting*, talks of the painter as a free creator: *If he wishes to, the painter can see beauties that arouse his love; he is the master of creating them. He can create inhabited lands and deserts, shady, dark places: he is the master of them. If he wishes to, he can create horrific monsters or buffoons that make him laugh or feel compassion. He is the sovereign master of them, the god*.

The same certainty emerges from Bolyai's famous message announcing to his father in 1823 the existence of a non-Euclidean geometry: *from nothingness I have created another world, a new world!* According to the interpretation of the famous Bible exegete Salomon of Troyes, the divine words addressed to Adam – *the day you eat the fruit of the tree of knowledge you will be like God* – in fact mean that you will become *creators of worlds*.

In the late 19th century the same consciousness of *homo secundus deus* became the guiding idea for the great mathematician Richard Dedekind, to whom we owe the modern theory of irrational numbers: *We belong to a divine race, we have the power to create new objects, especially in the area of the things of the mind. The irrational number is a creation of the human mind*. Dedekind conceived the irrational number $\sqrt{2}$ as a representation without a represented, an image without an object, a sign without a signified, a term without a reference, a being absurdly issuing from non-being – exactly as Plato noted in his *Sophist*. And the great logician Gottlob Frege criticized him for it with a direct sincerity and not without reason: 'Mr Dedekind thinks we are free, like a poet, to invent everything that does not exist, even the unthinkable. He shamelessly usurps the omnipotence of God and endows himself with the power to create freely whatever he likes.' Bertrand Russell was scarcely kinder when he wrote that *the advantages of Dedekind's idea were like the advantages of theft over honest toil*.

What neither of them ever understood is that the sole ontological foundation of the irrational number lies in an act by the subject, the transcendental Subject of mathematical thought who, by an axiomatic decision and imperative, gives it a being. The theorem 'the sum of the angles of the triangle is equal to two right-angles' is true – we read in Descartes' *Meditations* – because God willed it: thus that is true and cannot be otherwise. *Deus fons veritatis*. This Cartesian thesis, which makes the subject the source and ontic foundation of mathematical truth by stating the subject's priority vis-a-vis the object of knowledge, is one of the chief ideas in western thought. We find it again in an extremely explicit and categorical form in Giambattista Vico's thinking.

Knowledge of non-being: mathesis and poiesis

The subject knows non-being but, because of that very knowledge, gives it the ontological value of being – being in the episteme, in the being domain of knowledge. Consequently non-being is. It is in the world, hidden inside the subject, who gives the ontic modality of *being-known*: *Indeed, there you are, I say 'the' Non-being (τὸ μὴ ὄν γὰρ φημι) . . . So I talk about it as a 'One' (ὄν οὕτως ἔν αὐτὸ εἶρηκα). You understand, don't you? – says the Stranger from Elea to Theaetetus in Plato's Sophist or on Being (238e). And speech itself, the Word (logos – λόγος), belongs to the ontic domain of being (τῶν ὄντων, 260a).*

This obvious contradiction, which contrasts the non-being of the thing with the ontic modality of *being-known* and gives it a name, at the same time assigning it the ontic status of being Word, λόγος, plunges the subject into a state of *unhappy consciousness*: consciousness is torn by the impossibility of getting rid, in the epistemic domain of knowledge, of the irreversible presence of non-being. *Indeed, did I not say a while back that Non-being is ineffable, inarticulate in words (ἄφθεγκτόν καὶ ἄρρητον), unthinkable and completely irrational (ἄλογον)? But when, by an onomatopoeic act, I give it the name Irrational (ἄλογον γε λέγων), inarticulate in words, my speech nevertheless seems in fact to denote a 'One' (ἔν τὸν λόγον probably a pun on λόγον–ἄλογον), something unique, an individual reality. In giving it being I am thus caught in an obvious contradiction (ἐναντία, 238e–239a).*

The superb text of the *Sophist*, in which this difficult, cryptic text develops about the encounter between the subject and knowledge of non-being, also opens ontology's way through western thought: an ontology of non-being – probably a negative ontology, but is any ontology worthy of that name not negative?

Deciphering that discourse on being and non-being leads us to recognize that behind those words is concealed the mathematical idea of the amazing irrational, ineffable entities of which Theaetetus was the ancestral founder. The dense and extremely unusual occurrence of the mathematical terms ἄλογον, ἄρρητον and their synonyms – to which in his time Kurt von Fritz frequently drew our attention – is striking in this context devoted to being and non-being. It is clearly perceptible like a prompter's murmur accompanying in counterpoint the text of the ontological drama in which Theaetetus plays a central part and betrays the geometrically inspired source for the transmutation of non-being into being.

The world of numbers, as we have long known – the great algebraist and con-

noisseur of the Kabbalah Leopold Kronecker guarantees it – was created by God. That is probably the reason why they are called *natural numbers*. And probably it was also God who created the world of *λόγος* too, the ordered pairs of natural numbers or – to take that term whose origin is Pythagorean in its current use – the universe of *rational* numbers. Everything that is number is present within that world of which the Pythagoreans were the first cosmographers. The universe of number is coextensive with the domain of being, $\delta\ \pi\acute{\alpha}\varsigma\ \acute{\alpha}\rho\iota\theta\mu\acute{o}\varsigma\ \tau\acute{o}\ \pi\acute{\alpha}\nu\ \acute{\epsilon}\sigma\tau\alpha\iota$ (Plato, *Theaetetus*, 204e; *Sophist*, 238b). Beyond the *λόγος* begins the domain of the *ἄλογον*, coextensive with non-being.

Pythagorean mathematicians demonstrated the absolute impossibility of the presence in the vocabulary, thus in the arithmetical Universe of the *λόγος*, of a name of number whose multiplicative composition ‘ \times ’ with itself would be equal to the number two, ‘2’ (such a demonstration can already be found before Aristotle in the *sectio canonis* by Archytas, a friend of Plato’s). The expression ‘ $2^* \times 2^* = 2$ ’ or in words ‘number 2^* whose multiplicative composition with itself $2^* \times 2^*$ is equal to 2’ no doubt has a precise arithmetical meaning, intelligible and unique; it is nonetheless the metalinguistic expression of an arithmetical non-being, of a number whose existence in the being domain of the language-object has been demonstrated to be impossible. The metalinguistic symbol ‘ 2^{*1} ’ designates a non-existent and clearly non-natural number. It is the symbol of a numerical non-being: it looks at itself in the mirror and sees nothing. In spite of this *that non-being has its own unshakeable nature* ($\tau\eta\acute{\nu}\ \alpha\upsilon\tau\omicron\upsilon\ \phi\acute{\upsilon}\sigma\iota\nu\ \acute{\epsilon}\chi\omicron\nu$, 258b) which the stenogram of its definition ($2^* \times 2^* = 2$) expresses with absolute exactitude. It is clearly a symbol in itself, a symbol without reference: *what in fact does that name ‘non-being’ denote?* the Stranger from Elea asks Theaetetus (*Sophist* 237c). What does the metalinguistic symbol ‘ 2^* ’ denote? For the subject the symbol 2^* of a non-being is obviously *the name of nothing* ($\mu\eta\delta\epsilon\nu\acute{o}\varsigma\ \acute{\omicron}\nu\omicron\mu\alpha$) or, if it is the name of something, it can only be the name ‘ 2^* ’ of the name 2^* and of nothing else (*Sophist* 244d). A nothingness all of whose properties the subject nevertheless knows, real properties of a non-being: in the linearly ordered domain of arithmetical being he knows the absolutely exact position of that hole empty of being, *filled with the shadows of non-being* (*Sophist* 254a) and defined by an infinite dyad or, in modern terms, by a Dedekind cut.² The One, in this case the non-being 2^* , separates the dyad’s two infinite terms.

The infinite dyad and the One – as the work of Konrad Gaiser, Hans Krämer and Giovanni Reale has shown – were at the heart of the research carried out by Plato in the context indicated by Aristotle by the term *the unwritten teaching* of Plato. The exceptional historical significance of the infinite dyad lies in its ability to offer the only possible ontological foundation to the autonomous existence of the irrational – without any recourse to a signified, or any geometric figure whatsoever. The existence of the One, the irrational, is ensured in immanent fashion by an infinite dyad whose two infinite terms are composed of rational values, *λόγος*. The One, the irrational, therefore has no need at all of an external reference, the prior existence of an object, such as that geometric object the diagonal, for instance.

What we call non-being is thus knowable, just like being, we read in the *Parmenides* (160d). While remaining faithful to Plato’s thought, we may say instead that only non-being is knowable with absolute certainty and rigour. We never have doubts in dreams. The dream world is one of absolute certainty, the world of the indubitable.

A biography of Marie-Antoinette will never be able to tell us about the queen's life with absolute precision; the text of *Madame Bovary* on the other hand describes its object, the beautiful Emma Bovary, with the same irrefutable exactness and certainty as a geometry textbook describes the six magnificent regular polytopes of four-dimensional space and the three regular polytopes of spaces with more than four dimensions. As Valéry said in *Au sujet d'Adonis*, 'there is nothing as beautiful as what does not exist'.

The object reproduces its knowledge exhaustively: it contains everything we know and nothing else. As Cardinal Nicholas of Cusa appositely noted, truth is the adjustment of *the thing to knowledge of it: veritas – res ad intellectum adaequatio*.

And so it appears that there are two exact kinds of knowledge, the novel and geometry. The obvious reason for this is that their texts have no object of reference in the domain of being. Indeed, if we wish to remain faithful to the meaning of *the good old word 'exist'* – as the great American philosopher Willard Van Orman Quine requires – we must say that, *in our common-sense usage of 'exist'*, the four-dimensional cube is a non-being as is Emma Bovary, since the nature of both is known with absolute precision.

Thus the subject knows the One, in this case 2^* , as a non-being, but has assigned being to it because being-known is a modality of present being. The symbol 2^* is therefore identical to knowledge of it by the subject, it is a hypostasis of the arithmetical Subject. Paraphrasing Vico's words, we can say: 'I think 2^* , therefore 2^* exists and multiplied by itself it gives $2'$ '. In saying these words that non-being which is 2^* acquires the ontic state of being: it is a *being-known*, a purely noetic object that remains inside the subject and is itself consubstantial with the subject. *The polyccephalic Sophist*, ὁ πολυκέφαλος σοφιστής, has forced us, against our will, to admit that, somehow or other, non-being is – as the Stranger from Elea, who admires Parmenides the Great, says against him (*Sophist* 240c, e, 241d). He painted his image on the wall and suddenly the devil appeared.³ In order to be, there is no need for 2^* to designate the diagonal of the square, it is enough for it to designate nothing but itself as an object of knowledge. To say it with Plato's *Sophist*: the name of the *Name* is 'Name' (τὸ ὄνομα ὀνόματος ὄνομα μόνον, 244d); the metalinguistic symbol 2^* becomes the name of a number belonging to object-language, a non-natural number, a number – to use the Pythagorean terminology used by Plato in the *Sophist* – which is *irrational, inexpressible, ineffable, inarticulable and unthinkable* (ἀδιανόητόν τε καὶ ἀρρητόν καὶ ἀφθεγκτόν καὶ ἀλογόν, 238c). The symbol 2^* articulates the number 2^* , inarticulable in object-language.

By the instantaneous rise of non-being to being and in general by this addition of the irrational to the established world of the λόγος, the original world of arithmetical discourse was fundamentally enlarged: the irrational, the ἀλογος, was assimilated into the ontic domain of the λόγος. In the 13th book of the *Elements* Euclid writes, regarding the *logos of the extreme and the mean* (which we now call the *golden section*), that this *logos* is an ἀλογος, an *irrational* (ἄκρος καὶ μέσος λόγος . . . ἀλογος ἔστω) called 'apotome'. (The first occurrence of the term is in a metaphorical play on words in *Phaedrus* 264c: discourse, λόγος, must be constructed in accordance with *the beautiful proportion of the mean and the extreme*.)

The universe of arithmetical being has thus expanded. Henceforth rational and

irrational are part of the same domain of being. It is the enlarged world of numbers that we today call 'real', where λόγος and ἄλογος are integral and complementary parts of the same single real world and share the same ontic modality of being. It was a radical ontological transmutation which made a completely new domain of being, unknown in the past, emerge from non-being: the vast domain of the irrational, without any existential medium in the physical world, whose 'real' number status is due solely to its presence within the subject and to the fact that the subject knows it.

The existence of an irrational number such as 2^* has never been demonstrated by mathematicians for the simple reason that it is impossible to demonstrate. From the demonstrable *non-existence* of a *rational* number ' 2^* ' the *existence* of an *irrational* number 2^* does not follow at all. The polycephal Sophist has not demonstrated anything, he has forcibly *constrained* us, *against our will* (ἡνάγκασεν ἡμᾶς . . . οὐχ ἐκόντας 240c), to assign a being to the irrational non-being that is 2^* . The *forcing*, the constraint exerted by the polycephalic Sophist, is equivalent to an axiomatic statement, non-refutable but also non-demonstrable, establishing the existence of the irrational, 2^* , by direct attribution (that is, without the mediation of an empirical or logical proof) of a being to non-being. The axiomatic statement is the autonomous act of a free subject.

The existence of an irrational number 2^* is not the result of a process of natural generation. 2^* exists, as a real number, solely thanks to an admitted act of constraint issuing from a free decision by the polycephalic Sophist who, in this drama of Being, represents – as the dialogue's subtitle suggests – the transcendental subject of the ontological act which assigns a being to non-being.

This transmutation of non-being into being carried out by the subject seems to be associated with goetia (γοής, 235a, 241b), sorcery, fraudulent black magic, but the Stranger from Elea insists: despite appearances, the dialectic interplay of being and non-being is in no way a sophistic joke or an eristic exercise, but a real phenomenon of the mind that has to be taken seriously (237c). *Every act of creation is a transition from non-being to being*, Diotima reminds us in Plato's *Symposium*.

In a passage from the *Epinomis* (990d) explicitly devoted to the phenomenon of the irrational, Plato enthusiastically talks about the sudden transformation (via an elementary geometric construction) of a *number* (ἀριθμός) by its nature (φύσει) not square (for example $2 = 1 \times 2$, non-decomposable into equal factors) into a square number ($2 = (2^*)^2$, where the number 2 is decomposed into two equal factors: $2 = 2^* \times 2^*$): *A miracle that certainly transcends the domain of the human* (θαῦμα οὐκ ἀνθρώπινον) *by revealing its divine ancestry* (γενεῶν θεῶν) *to all who are able to understand it* (τῷ δυναμένῳ συννοεῖν).

The existence of the irrational is in fact the product of a veritable thaumaturgy. The sudden metamorphosis of a non-being into a being is incomprehensible, a genuine miracle that openly contradicts the laws of logic; the irrational is its illegitimate child in the world of pure Reason, the λόγος.

Assigning being to non-being: a transcendent act by which the subject, pure reason, becomes aware of the presence of knowledge as an immanent reality in the universe. It is a unique event of the mind that takes place beyond the bounds of logical thought and specifically mathematical rationality. This event consists of the subject's sudden consciousness of having the unique power to think non-being and

assign to it the ontic modality of being. This act of becoming aware is also perhaps the most essential, the most crucial contribution of mathematical knowledge to the subject's self-consciousness. Plato's words provide us with the historical evidence for this unique and exceptional event of Reason and it is precisely that becoming aware that gives Plato's philosophy the extraordinary, decisive position it occupies in the history of western thought.

The Irrational appears all of a sudden on the visible surface of consciousness, without any mediation. Its presence is not the product of a gradual, continuous movement of thought, imperceptible increments of knowledge. The existence of the irrational has no diachronic prehistory, its existence has never been foreseen, assumed, predicted. Its presence introduces a sudden and irreducible discontinuity into previous stages of history. This yawning gap, this emergence into being of the knowledge that the Irrational has an autonomous existence in the Universe, marks a red line in the rising movement of thought, clearly separating a *before* from an *after*. That red line marks the encounter between the *esprit de finesse* and the *esprit de géométrie*: the Ego's speculative work secretly but decisively takes over the controls of mathematical thought, whose methodological guidelines it would define in the space of the western mind. The majority of the subsequent conquests of mathematical thought would rely on this dynamic of negativity; the evolution of mathematical thought appears like a chain of discontinuities, sudden ontological breaks and instantaneous transitions from non-being to being.

There is no number smaller than zero, smaller than nothing: the new world of whole numbers emerges thanks to the transition into being of that non-being that was the negative number. The great 16th-century Italians were the first to possess the knowledge of what they themselves called numbers that were *imaginary*, *impossible* (which they symbolized by the initial letter 'i'), *fictive* and *sophistic* and which Leibniz later characterized as *monsters of reason*, *amphibians of being and non-being*: neither bigger nor smaller than nor equal to zero, but whose bizarre unit (the impossible square root $\sqrt{-1}$), multiplied by itself, gives '-1' – an impossibility that was not only flagrant but also rigorously demonstrable in the domain of the arithmetical *reality*. *Quot modis numerus possit produci ex non numero* – how can a non-number generate a number: that was the title of one of the chapters of the *Opus novum* by Jerome Cardan, the inventor of that *non-number* or *imaginary number*. In his 1799 doctoral thesis Carl Friedrich Gauss, the future *princeps mathematicorum*, was indignant: why call them *imaginary* numbers when they are as real as 'real' numbers. They absolutely have to be given *citizenship* and *equality of rights* in the field of arithmetical being. By assigning the same ontic value to the imaginary and the real, a new field of being, that of complex numbers, suddenly passed from non-being to being. But the real existence of imaginary numbers has never been demonstrated and is not demonstrable either by empirical means or by any logical reasoning. To assign to imaginary numbers the same positive ontic value as to 'real' numbers is an act resulting from the subject's free decision.

Let us come to the paradigmatic example of non-Euclidean geometry. Euclid's *postulatum*, the proposition *E* from which Euclidean geometry's text derives, is denied. The proposition non-*E* is obtained, the formal negation of *E*, from which the consistent mass of the non-Euclidean text derives. The two propositions *E* and

non-*E* are clearly incompatible in the context of the same discourse: if one is true, the other – in accordance with the logical axiom of the excluded contradiction – must of necessity be false. One and only one of the two propositions can be true; one and only one of those two Universes can have being. Truth has, since the dawn of time and of course without demonstration, been assigned to the Euclidean proposition *E* and it is to the Euclidean universe alone that the ontic value of ‘being’ has been given.

But the feeling that a rigorous logical demonstration is necessary to establish and justify the truth assigned to the Euclidean proposition *E* as geometry’s sole truth, the feeling of the need for such a demonstration of the uniqueness and exclusivity of Euclidean truth, arose as early as the time of Plato’s Academy. Since direct demonstrations failed, the apagogic method of indirect demonstration was adopted: by stating the non-Euclidean proposition non-*E* as an initial hypothesis and developing its logical consequences, it was hoped that two contradictory propositions would be the result, which would demonstrate the falsehood of non-*E* and ensure *E*’s uniqueness and the necessity for its truth. All attempts to reduce to the absurd the non-Euclidean text non-*E*, repeated over two millennia, have failed. The first non-Euclidean fragments and theorems – and some of them are truly amazing – have come down to us preserved in the geological strata of the Aristotelian *corpus*. *Geometrical in one sense – non-geometrical in another* (γεωμετρικόν πως καὶ ἀγεωμέρητον ἄλλον τρόπον), a consequence of a perverted archè: this was how Aristotle commented on the text of one of the theorems in the *Second Analytics*. And in *Cratylus* Plato talks of the chain of consequences from the proposition non-*E* as if it were a connected text and completely coherent from a logical viewpoint, and yet false because logical coherence – as he explicitly states in answer to *Cratylus* – could not be a truth criterion. Plato himself insinuates that this text, false but coherent, might be the malevolent work of an Evil Demiurge (δημιουργὸς κακός: I think this is the first occurrence of that expression, which later became a basic term in Gnostic philosophy and re-emerged, in a similar mathematical context, in Descartes’ *Metaphysical Meditations*).

Up to the early 19th century a network of propositions representing practically all the significant consequences of the non-*E* hypothesis slowly developed. Though all the mathematicians and philosophers had, without the slightest hesitation, given this text the propositional value ‘false’, it was impossible for them to supply the smallest proof. The Ego and the Stranger: the subject accepts the Euclidean as his own, identifies with Euclidean knowledge and being (*E*), the Euclidean is consubstantial with him – ‘Euclid is Me’; he rejects its opposite, non-*E*, as the non-being that is essentially alien to him, and whose knowledge is incompatible with his knowledge, his self-consciousness, his consciousness of being Euclid. However the Stranger’s knowledge is just as unshakeably present in the subject as the Ego’s knowledge; and the Stranger, non-*E*, is what it is only because it is known as such, as alien, *by* the Ego, because it is consubstantial *with* the Ego: ‘the Other, non-*E*, is Me’ says Euclid. The assured knowledge in the non-*E* text, the powerlessness to demonstrate its falsehood and its consubstantiality with the Ego plunges *the spirit of geometry* into the anguished state of the *unhappy consciousness*: it felt condemned to swinging eternally between *E* and non-*E* without ever reaching a state of rest. The universe of geometrical objects assigned to the non-*E* text was clearly in the ontic state of non-

being, worse still in the modality of ontic impossibility, because the Euclidean universe contains *all* that is, all the geometrical figures, and the existence of a non-Euclidean triangle is therefore impossible – without however being absurd from a logical point of view.

The transition to what Gauss in 1824 called ‘non-Euclidean geometry’ was not a continuous, linear movement but a sharp jump, an instantaneous ontological break. It was *the Instantaneous*, *Τὸ ἐξαιφνης*, Plato talked about in the *Parmenides* as a thing of a very strange kind (*φύσις ἄτοπος*), a movement outside time of non-being to being. However, the place of that upheaval is not within geometry: from the syntactic and semantic viewpoint ‘non-Euclidean geometry’s’ text is typographically identical to the text that was derived by strictly logical inference from the initial non-*E* proposition over the previous centuries. The non-Euclidean break did not change the existing text. No new theorem which might have formed the basis for ‘non-Euclidean geometry’ was formulated or demonstrated.

Contrary to what most philosophers claimed, the non-Euclidean transformation also left unchanged the semantics, the meaning of the basic terms in geometrical language. *Lines that are straight in a space are not straight in another space*, Bertrand Russell continually repeated. He was wrong. Geometry is a non-figurative science. The term ‘straight’ in the non-Euclidean field designates the same straight (and never curved) object as it designates, incontestably, in the Euclidean field.

The non-Euclidean upheaval took place beyond the Sky of the geometrical space, outside the *spirit of geometry’s* space and in the transcendent spheres of *supra-celestial* Reason. It was truly an event of a very strange kind, an instantaneous eruption of that dialectical reason which Hegel designated with the three-meaning term *Aufhebung*, negate, elevate, preserve – *negare, tollere, conservare*: negation of the *true* proposition, the Euclidean axiom *E*, immediately leads to the *false* proposition non-*E*; the proposition non-*E* is detached from its Euclidean context and *elevated* to the status of autonomous axiom to which is assigned the propositional value *true*. But the truth of the Euclidean axiom *E* remains untouchable, it is maintained at the same time as the truth of the non-Euclidean axiom non-*E*: the Euclidean semantic meaning also remains invariably preserved in the context of the non-Euclidean world. On the ontological level knowledge of geometrical non-being corresponds to the first stage, as the non-*E* universe by its structure is opposed to the Euclidean universe *E*. The second stage is represented by acquisition of the knowledge that the non-*E* universe is an autonomous ontic domain containing *all* geometric objects. However, the Euclidean universe is preserved as an autonomous ontic domain; the two universes are thus not complementary, because their complementarity, considering them as two parts of the same ontic field, would lead to logical inconsistency. Each of the two universes contains all that is. The totality of straight lines is present twice, once as Euclidean and once as non-Euclidean.

A veritable immaculate conception, non-Euclidean geometry emerged fully armed from the head of Euclidean geometry, like an answer preceded by no question, an offer preceded by no request. No one was expecting it. They were expecting exactly the opposite: the logical, rigorous demonstration of Euclidean truth’s uniqueness, the final elimination of non-Euclidean absurdity. *Geometry, like the whole of mathematics, is part of logic*, Bertrand Russell kept saying early in the 20th century. A

century before, at the same time as non-Euclidean geometry's appearance, of which he knew nothing, Hegel retorted in the *Science of Logic: Mathematics owes its most brilliant successes to ideas contradicting discursive reason.*

Non-Euclidean emergence was a radical upheaval, political in nature in the being field of Reason, of absolute subjectivity: at that decisive moment the subject of mathematics became aware of its immanent freedom, its freedom to assign truth at the same time to two contradictory axiomatic propositions. The break with the logical axiom of contradiction became obvious. The word 'freedom' became the watchword of mathematical creation repeated loud and clear by mathematicians of succeeding generations. The logical axiom of contradiction invariably preserves its validity within each of the two opposing universes: their reciprocal logical coherence is rigorously demonstrable. The two contradictory truths are also atemporal, therefore implicitly eternal and have the same certainty: it is possible to demonstrate with all rigour that non-Euclidean truth is as irrefutable as Euclidean truth. The source of the simultaneous truth and being of these two opposing universes is within the subject: it possesses knowledge of both and the non-Euclidean universe is in the same ontic state of being-known as the Euclidean universe. The subject recognizes them simultaneously and recognizes being the subject of both universes at once.

This was also the essential and exceptional contribution from specifically mathematical thought to the phenomenology of universal mind: it was thanks to that geometric event that the subject became conscious of the fact that its freedom means absolute autonomy, the independence of the logical domain and the subject's ontic priority vis-a-vis the object of knowledge. Philosophy is universal; there is no mathematical philosophy separate from the rest. But there is a philosophy whose source is and cannot be other than mathematical knowledge, there are certain delicate and extravagant manifestations of the universal mind that can show themselves only in the field of mathematical being. In relation to the idea of infinite sets, transfinite ordinal and cardinal numbers that made it possible for him to revolutionize mathematical thought, Georg Cantor talked of the *dialectical generation of new concepts freely created.*

As far as I know this dialectic immanent in the progress of mathematical knowledge was synthesized for the first time in 1921 by that exceptional mind Franz Rosenzweig: *'Non-being precedes being.* But it is a movement that goes from a specific non-being to its being, a transition from nothing, from "its" non-being where the thing itself is in the state of non-being, and this guiding principle defines and determines the development of the only unique science: mathematics. And this is precisely the reason why mathematics, and it alone, shows us the way to recognize the source of being in nothing.'

'The terrifying power of negativity'

With men Nature generated its own negation. When they appeared, men opposed nature. *Opposed to everything and directed against everything: that is the position of men in the Universe* – that surprising remark is to be found in the book *De sapientia* by Charles de Bovelles, canon of Noyon, one of Nicholas of Cusa's few open followers.

The subject conscious of itself, Reason, the *νοῦς* is the autonomous and sovereign ontic domain. It can make things that nature could never produce without the catalytic intervention of thought. It can deny nature, create, elevate non-being into being. And, to follow Charles de Bovelles' text, *it fills the void of being with beings from its reason, its creations.*

'No': that is the subject's distinctive word, the act of identity of pure subjectivity. Among all the things in the universe the subject is the only one to deny, the only one to say 'No' to an established order, who is opposed to what is, even to an entire world, and who asserts knowledge of another world, its own. Being the field of pure reflexivity, the ego is also the only thing in the world that can deny itself.

Thus negation is the expression of freedom, the specific difference that marks out the subject's uniqueness. It is also the source of creation of another world, a new world, 'The terrifying power of negativity, the energy of thought, of the pure ego!' cried Hegel in the Preface to the *Phenomenology of Mind*. *The terrifying power of negativity* – that is one of the West's immanent forces which has defined the path of its spirit and invested its thought with the ability to transcend itself – *sich aufheben*.

It was in the context of Judeo-Christian thought that people became aware of the relationship of *diremption* – to use an expression coined by Hegel – that both connects and separates Nature and humans: a dialectical link which brings together in indissoluble coexistence love and hate, liking and hostility, divorce and inseparability of Nature and Spirit. Nature, the body are the permanent source of the passions, vice, sin. The spirit is the source and seat of virtue, and life has to be a continual struggle against the temptations of the passions that come from nature, from our bodily condition. God, the One, does not belong to Nature, he resides neither on Parnassus, nor in a spring, nor in an oak or a wood, nor even in the clouds – *deus sum absconditus*: he is only in the spirit, in the human subject. In his sermon *Beati pauperes spiritu* Master Eckhart (who – according to the posthumous condemnatory bull issued in Avignon – *wished to know more than what is necessary*) said: *if I were not, neither would 'God' be*; and in another sermon, *God does not exist anywhere else but in the intellect and his being is nothing other than Knowledge, for God is reason itself.*

The Fourth and penultimate part of the *Ethics* by Spinoza (another person who – this time according to the Amsterdam Synagogue – *wished to know more than was necessary*) is devoted to examining *Human servitude*. The author defines it as *human beings' powerlessness to moderate and control their affects*, which have their origin in the body, with the instincts, passions and natural tendencies – cupidity, pride, vanity, envy – whereas *the free man allows himself to be led by reason*. The final part of his work is consequently devoted to *The power of reason or human freedom*.

Since Aristotle, freedom had been defined in opposition to necessity. Spinoza's thinking introduced a break in the philosophy of freedom: it was not necessity that limited freedom but arbitrariness. The tyrant is not free, he is the slave of his passions. *The power of reason* imposes on freedom a dimension of necessity. In *L'Homme révolté* Albert Camus summarized Spinoza's thinking in this superb formulation: *the free spirit loves what is necessary.*

Reason, the sole guide for freedom; God, consubstantial with Reason – these propositions of Master Eckhart's and Spinoza's are not the product of a discovery, as the discovery in entomology of an exotic insect or a geographical discovery would

be, but rather the result of a logical inference. They nevertheless represent a knowledge as solid as and perhaps more significant than the discovery of the rhinoceros made in Vienna by Albrecht Dürer. It is an increase in essential knowledge, but this knowledge proceeds from becoming aware of the presence, *parousia*, of the inseparable trinity *God, freedom, reason* within the subject.

Becoming aware, a third kind of knowledge

The subject becoming aware of itself and in itself is a unique cognitive act, an acquisition of knowledge radically different from any discovery in the proper sense, very different from what classical epistemology calls *discovery*.

This cognitive process nonetheless produces an increase in knowledge, since the mind as a thinking subject becomes conscious of itself, its contents and its distinctive characteristics. The knowledge of its freedom is perhaps the most essential cognitive increment of the human condition. According to Aristotle (*Eudemian Ethics*, II 6) freedom represents the human being's distinctive feature, among the things in nature humans alone (*ἄνθρωπος μόνον τῶν ζῴων*) possess it and obtain their uniqueness from it.

It is probably the knowledge produced by an act of becoming aware that Spinoza called *third kind of knowledge* and which for Plato appeared in the form of an *anamnesis*: as if affected by an electric shock Menon's slave suddenly *remembers* something he has never forgotten because he has never learnt it – the existence of the Irrational. He has not demonstrated anything – the existence of the irrational being undemonstrable – by the end of a tortuous and torturing interrogation: a flash of revelation has made him suddenly become aware of the presence of the Irrational in his knowledge.

Freedom is, it exists, yes, it is a reality, but it really *is* if and only if we know it, if and only if the subject is aware of its freedom: the ontic basis of freedom is knowledge of it. Its ontic modality is that of a *being-known*. *Man is free* – wrote Hegel in the Introduction to his *Philosophy of History* – *but he does not know it; therefore he is not free*. The subject is the home of things that have no existence except in knowledge and through knowledge.

The absolute uniqueness of this ontic field of knowledge, this *being-known* that is the subject's cognitive space, lies in its reflexivity. Its movement is a continuous expansion of its self-consciousness, of the subject's knowledge of self. Furthermore the subject's reflexive movement, becoming aware of its freedom, is a movement as natural, as inherent in the profound *nature of things*, as the movement of clouds, rivers or stars. That force which encourages the mind to become aware of itself fills the subject's non-geometric space just as the force of gravity fills the cosmic spaces of the material world. The history of western thought coincides with the subject's repeatedly becoming self-aware. In the end this self-consciousness, this absolute subjectivity, turns out to be the primary factor determining the choice of actions and events.

Becoming aware of freedom is the western mind's phenomenology – it is the appearance, *φαινόμενον*, of the mind on the *epiphaneia*, the visible surface of things.

This becoming aware means the mind appears in the light of day and becomes visible to itself in the form of an assured knowledge, a knowledge as immediate and instantaneous as a lightning flash – a flash of lucidity, a burst of *lux* from the setting sun, an irradiation of the mind of the west. The expansion of social criticism is an essential part of this movement, this uninterrupted rise of the mind towards more and more complex states, towards self-awareness of its freedom.

Awareness of freedom and its historical necessity

Becoming aware of freedom is the result of the movement peculiar to the mind. Therefore I think it is justified to assign to it a modality of necessity. It is a specific and immanent necessity in the human mind.

It is precisely this different kind of necessity that Hegel saw at work in the unfolding of events throughout history. In his philosophy there is explicitly articulated the idea that the mind's ascending movement towards consciousness of freedom is an immanent necessity in the mind which defines the western thought's trajectory through history. On the eve of the battle of Iena he wrote on one of the last pages of his *Phenomenology*: *The indivisible substance of freedom rises to the world's throne without any power being able to resist it.*

It is that kind of necessity again which André Lhote assigned to the great works of artistic creation in his essay *Sur le paysage: To give the world a thing that no one would think of asking for but which, once it is there, no one could do without.* And it is the same kind of necessity that caused to emerge, and forced the irreversible reception of, revolutionary scientific ideas such as non-Euclidean geometries, infinite sets or the theory of relativity, even though their intrinsic necessity was initially perceived only by their creators. Not only would it never have occurred to anyone to demand them before they emerged, but even after breaking upon the market of scientific production they were received with hostility and long rejected as desperately pointless monstrosities. By the late 19th century Bertrand Russell was still pointing out that it was impossible to conceive non-Euclidean geometry: *These geometries are incompatible with one another on principle. Two different spaces cannot coexist in the same world.* Gottlob Frege, the founding father of that great movement of contemporary scientific rationality that is analytic philosophy, expended enormous energy on fighting against non-Euclidean geometry, the modern theory of mathematical irrationality and in general everything he considered to be merely *morbus mathematicorum recens* and called with open contempt modern mathematics. In his personal vocabulary the word 'modern' was in any case defamatory in all fields. For etymological reasons, which in fact were erroneous, Frege assimilated all those 'modern' ideas with frivolous and ephemeral fashion ('mode') that raised the ugly to the rank of beautiful. And in his thinking the 'beautiful' was the height of the individual's whimsical subjectivity, a paradigmatic example of futility opposed to the seriousness of scientificity.

Though it is based on somewhat malicious but harmless intentions, the comparison is nonetheless not entirely misplaced; the word 'elegance' is the supreme compliment that has constantly been very seriously paid to the great theorems of

mathematical creation since the Pythagoreans. For a time that ancient epithet was replaced by the superlative *bourbachic* – a title granted to the *haute couture* of mathematical elegance.

In his extremely outspoken polemic against David Hilbert, Frege asked a rhetorical question in 1906: *So have we not yet got rid of those atrocious (grässlich) modern times?* He criticized *modern mathematicians* for *intentionally committing a sin against science* (Versündigung an der Wissenschaft); as for David Hilbert, he accused him of *having personally polluted the spring of geometrical knowledge with filth* (Verunreinigung). And *May I be spared that s . . .*, he exclaimed, immediately apologizing for not finding a parliamentary expression for them. *Non-Euclidean geometry, out with it!* – in that commanding tone of his, Frege ordered the new geometry to be thrown out of *mathematics*, to be *banished* (herausfliegen) *from science in the same way as alchemy and astrology*.

His inspiration was faulty. Looking at the facts with hindsight, we can say that Frege understood very little and very poorly what was happening around him in the mathematical sciences. Once non-Euclidean geometry was established, the subject became aware that the basis for mathematical creation lies in its explicitly accepted freedom, the choice of the necessary dictated less by formal logic than by Reason, *λόγος*, as Spinoza required. But nothing was more repugnant to Frege than the word ‘freedom’, in both politics and mathematics. He identified *freedom* with the arbitrariness of whim and contrasted it with the *law* and *order* that must reign in the scientific *system of single truth*.

Frege went into voluntary exile on mathematical thought’s Galápagos Islands. In the century that has passed since the threats and dire forecasts made by Frege, modern mathematics has shown itself to be fertile to an unprecedented degree, and this has happened precisely because it has let itself be guided by the freedom to create stigmatized by Frege.

The Ego in the biography of the Cosmos

The life of the cosmos is assuredly made up of a chain of discontinuities where one qualitative leap follows another. Each leap brings immense growth in the quantity of information and generates more and more complex structures. That is what is meant by the term negative entropy: realization of smaller and smaller probabilities closer and closer to zero.

But all this movement involves only the existential domain of material substance. The ontic state of cosmic matter remains invariant in relation to these changes in structure. Despite its evanescent dimensions the Ego’s appearance was an event of more significant cosmic proportions than the birth of a galaxy, an event that all at once overturned and changed radically the ontic status of the Universe – a second Big Bang which shook to the depths the being domain of the established universe, a gigantic though inaudible explosion.

However, the event did not pass unnoticed. The Book of Genesis has passed the news down to us and given it the significance and value it deserves: *Their eyes were opened, they saw that they were naked*, and they were afraid, they became aware of the

sin they had committed; Adam and Eve took the liberty of knowing and first of all knowing good and evil. This is the myth of becoming aware of the freedom of knowledge, the myth of reflexive knowledge, knowledge of self by the subject and for the subject. Good, evil and sin exist only because a subject knows them: their place is within the Ego. A lion is not naked any more than it lives in sin. It is thanks to an act of becoming aware that the human being was raised to the rank of subject and the Book of Genesis gives that spiritual event, self-consciousness, a prime founding role in the coming of man.

The Ego is the existential domain of pure reflexivity, consciousness of self, so it denies himself, the negation of human by human. Self-consciousness opposes the Ego as knowledge to itself as nature. Its history is the narrative of its effort to free itself from that *Human servitude* that keeps it chained to its nature. Social criticism, which is articulated with growing intensity, the self-criticism of humans in western thought and sensibility, is one of the major consequences of the reflexivity of the subject of history. The history of the Ego is the narrative of its efforts to transcend itself, the story of its rise towards the reign of freedom, towards Reason's *instauratio magna*. The commandment 'thou shalt not kill' is one of the best-known results of that *amor intellectualis erga Deum*.

Endowed with self-consciousness the history of the Cosmos henceforth turned into a biography of its subject. Human history as a whole is the continuation of natural history, but this new natural force, consciousness, this new domain of being, the Ego, pure subjectivity, appears utterly different, autonomous, independent and irreducible to the forces of nature proper. The Ego is an obviously non-geometric space, full of the substance of freedom, the reflexivity of knowledge. The book of man is not written in mathematical language.

The history of the subject, the biography of the transcendental Ego, are only the continuation of the history of nature. Human history is the current stage of the natural evolution of the cosmos. The evolutionary process seems to abandon the zoological field to continue its movement in the existential field of the mind. Human history is the cosmic process of the human being's self-generation or, to quote some words the young Marx committed to paper in 1843 during his exile in Paris, this history is the true 'natural history' of man.

The subject itself is Nature but a different and new nature, a non-spatial and immaterial nature. This Nature that is the Ego, the subject, is the categorical negation of the *natura naturata* and, as being, is opposed to the non-reflexive *physis* of perceptible matter which fills three-dimensional space. But where did this Ego come from then if it does not occupy any extensive space? Recalling Leibniz's critical remark about an extraordinary birth, it might be said that *here it is, however, appearing and existing, without any preparation, without anything getting it ready, without an angel, without even God himself being able to see or show how it exists. Not only did it come from nothing, it even came by itself*. It is precisely the act of negation which connects it to and separates it from Nature by at once offering it an irreducible autonomy. But negation is an exclusive act of the subject and of the subject alone. So it was its own midwife: the Ego itself cut the umbilical cord that connected it to Nature. Its birth was autoparturition. Like God in John Scot Erigena's *Peri physeos* – according to Gershom Sholem, one of the sources of the Provençal and Catalan Kabbalah – the *incorporeal*

Subject comes from itself, from its Nature, where it is not, and creates itself, being both factor et factura.

Their eyes were opened – a blink and the Ego creates itself by an act of becoming conscious of self, of its freedom. Its being is its knowledge by itself: *thought is action* – ἡ νόησις ἐνέργεια, Aristotle noted in the *Metaphysics*.

The mind's being is its own particular act: I think therefore I am. The Ego *is*. The subject, the being-for-itself, has a present reality, a being-in-itself. Knowledge of self is the ultimate basis of the subject's existence. I am because I think, I am because I know myself. This self-awareness is the natural force that defines the subject's movement through its history. Human history is the product of the subject, it is the reflexive self-movement of the mind. The mind begets itself. It is begotten by itself. And the mind exists only to the extent that it shows itself and manifests itself, reveals itself to itself', we read in the Introduction to Hegel's *History of Philosophy*.

But knowledge is also an autonomous field of being. It is the universe of the episteme, pure Reason with the ontic value of a being-in-itself. This means that knowledge quite simply *is*, it exists in itself. So the Mind is the subject: existential domain of pure reflexivity whose ontology is radically opposed to non-reflexive Nature's modality of being. When an astronomer discovers a new star or a black hole it is the Cosmos that remembers its past by anamnesia. The memory is an act of interiorization, *Erinnerung*, of the external object. Knowledge of self is auto-interiorization, *Selbsterinnerung*, of the Universe. The Universe is double: as an object it is external to the subject of knowledge, as knowledge it is within the subject.

Sunt homines naturae curiosi – man is curious by nature: this platitude was handed down to us by Cicero. But the banality of the sentence instantly disappears when we think that man's nature is an inalienable part of cosmic Nature. Cicero's text means that Nature is curious through its constitution – curious to know, to know itself as nature without a subject, nature as an object of the cognitive subject, and to know itself as a reflexive subject that is at the same time the object of its knowledge.

With this in mind I think it is legitimate to ask the question in these terms: might the Universe not have been created to become aware of its being, to know itself – to be thrown out of paradise and open its eyes? Not without a certain astonishment Paul Valéry has passed on to us these words of Stéphane Mallarmé: *Everything will end up being expressed. The world was made to end with a beautiful book.*

The sudden emergence of the Ego in the space of the Universe suggests that the Ego represents the accomplishment of a natural movement, very weak and fragile in itself but immanent and incredibly tenacious, directed towards the realization of more and more complex and less and less probable structures, to end in suddenly opening its eyes and feeling an irresistible need to eat the fruit of the tree of knowledge, to know good and evil and to be entirely responsible for the freedom of its choice.

In a recent talk I had in Paris with Lars Dencik from Copenhagen University, he reminded me of a text from the Talmud. The author's name escapes me but his text is as follows: *Each day, when you wake up, you must remember two things: first, that you are nothing, second, that the Universe was created for you.* I think Aristotle was not completely wrong when, at the end of his *Metaphysics*, he pointed out that nature is not an episodic story like a miserable tragedy.

Philosophy, the space of self-awareness of the subject

Without philosophical meditation the mind could never rise to the stage of its own knowledge. The immanent constraint that forces it to become conscious of its present state, its constitution, acts like a natural force in accordance with the subject's specific nature and the unique ontology of the immaterial substance guaranteeing the mind's present reality.

Philosophy does not offer any knowledge of an object domain of specific being, so it is not the product of any process of *discovery*. Philosophy is not and cannot be a science. Nevertheless it is something, a text for example, a particular and unique knowledge; a cognitive process whose product is an essential increase in self-knowledge.

Philosophy offers the space where there develops this *phenomenon*, this immediate apparition, *φαινόμενον*, that is the subject's knowledge of itself and for itself – the *phenomenology of mind*.

The text of philosophical knowledge is made up of the uninterrupted secretion of the act of becoming conscious of the Ego. It is certainly the supreme point of Reason or, according to Aristotle's famous phrase, *the thought of thought by thought*, the *νοῦς*, the *divine intellect*.

The knowledge of freedom, justice, the universality of moral laws and the equality of human beings, the creative knowledge of the worlds that have emerged from non-being – the awareness of all that is the product of the mind's philosophical work. Philosophical knowledge is irreversible, it is the spiritual treasure of all humanity's life experience.

At the moment we are part of the opening of a radically new historical era. Despite the huge difficulties it is encountering, this movement seems to be looking forward to the earthly realization of human unity. What will be the face of this new god whose *invisible hand* is to control that coming history? We do not know. It remains hidden. The mind's speculative work continues nonetheless to perform its task, that of becoming conscious of the concealed dimensions that will make it possible for it to rise to the level of subject of that new humanity.

Ex oriente lux. The light of philosophy, in the sense I like to give the word, is a *luxury*. Without any visible usefulness, very expensive and yet much sought after, philosophy is the *haute couture* of the western mind and imposes itself with the same unavoidable necessity.

* * *

In conclusion I take the liberty of recalling a little story told by Diogenes Laertius about the encounter between the king who conquered the world and a philosopher who was and still is searching for Man: *ἐγώ εἰμι Ἀλέξανδρος ὁ μέγας βασιλεύς – κἄγώ, φησί, Διογένης ὁ κύων; I am Alexander, the Great King – and me, I am Diogenes, the dog.*

Imre Toth
Paris

Translated from the French by Jean Burrell

Acknowledgements

The author would like to thank Avvocato Gerardo Marotta from Naples for suggesting that he write this paper, Mr Francesco di Benedetto for generously assisting him with a first, different draft and Madame Françoise Willmann for reading and correcting the final manuscript.

Notes

1. This character allows us to avoid the more familiar symbol of the irrational number ' $\sqrt{2}$ ', *square root of 2*, designating an infinite algorithm rather than a given unique arithmetical object – a number.
2. Dedekind himself was inspired by the infinite dyad in the abbreviated form he found in Eudoxus, Plato's friend.
3. Cf. the German expression *den Teufel an die Wand malen*, based on the ancient belief in the power of the image: to paint the devil on the wall is to give him existence (note from Françoise Willmann).