

THE BEGINNING AND THE PROGRAMME OF HEGEL'S *LOGIC*

PROF. DR. ANTON FRIEDRICH KOCH

Universität Heidelberg
a.koch@uni-heidelberg.de

Resumen: *El objetivo del artículo es mostrar que la Ciencia de la Lógica de Hegel es una metafísica no estándar puramente lógica, que aún hoy pertenece más al futuro que al pasado. El ensayo consta de tres partes. La primera parte explica el programa de la Lógica, que consiste en diseñar una teoría estrictamente sin presupuestos, y muestra cómo debe ser tal teoría en sus primeros pasos. Esto permite interpretar y explicar el texto del primer capítulo de Hegel ("Ser") y la transición al segundo capítulo ("Ser-ahí"). Así queda claro por qué Hegel debe entender el absoluto o, como también podría decirse, el espacio lógico, como un proceso cuya evolución ha de ser expuesta en la Lógica. En la segunda parte, la negación se presenta como la única operación lógica básica en la Lógica y luego se expone en su autoaplicación como negación circular. Se explican las principales diferencias entre la negación circular en la lógica del ser, la lógica de la esencia y la lógica del concepto, y se plantean dudas sobre el optimismo de Hegel de que la evolución lógica pueda llegar a un final feliz.*

Los diversos estadios de la evolución del espacio lógico corresponden a planteamientos históricos actuales y futuros posibles de la metafísica, todos los cuales confunden un estadio con el espacio lógico en su conjunto, porque no reconocen el carácter procesual de lo lógico. Así, la Lógica puede leerse no sólo como una teoría de la evolución del espacio lógico, sino también como una exposición crítica sistemática de las formas actuales y posibles de la metafísica. Esto se ilustra en la tercera parte con tres ejemplos reveladores: el monismo de la sustancia de Spinoza, la teoría de las Formas (ideai, eidē) de Platón y la teoría de las formas sustanciales inmanentes (eidē) de Aristóteles.

Palabras clave: *pensamiento sin presupuestos, evolución del espacio lógico, negación circular, exposición crítica de la metafísica.*

Abstract: The aim of the article is to show that Hegel's Science of Logic is a purely logical non-standard metaphysics, which even today belongs more to the future of philosophy than to its past. The essay has three parts. The first part explains the programme of the Logic, which is to design a strictly presuppositionless theory, and shows how such a theory must look in its first steps. This makes it possible to interpret and explain the text of Hegel's first chapter ("Being") and the transition to the second chapter ("Being-there"). It thus becomes clear why Hegel must understand the absolute or, as one could also say, logical space as a process whose logical evolution is to be exposed in the Logic. In the second part, negation is presented as the only basic logical operation in the Logic and then expounded in its self-application as circular (or non-well-founded) negation. The main differences between circular negation in the logic of being, the logic of essence and the logic of concepts are explained, and doubts are raised about Hegel's optimism that logical evolution can come to a happy end.

The various stages of the evolution of logical space correspond to actual historical and possible future approaches to metaphysics, all of which mistake one such stage for the logical space as a whole, because they all fail to recognise the processual character of the logical. Thus Hegel's Logic can be read not only as a theory of the evolution of logical space, but subsequently also as a systematic critical exposition of actual and possible standard forms of metaphysics. This is illustrated in the third part by three revealing examples: Spinoza's monism of substance, Plato's theory of transcendent Forms (ideai, eidē) and Aristotle's theory of immanent substantial forms (eidē).

Keywords: presuppositionless thinking, evolution of logical space, circular negation, critical exposition of metaphysics.

Introductory remarks

The article consists of some introductory remarks and three parts. In the first part, I will look at the opening chapter of Hegel's *Science of Logic*, on Being, up to the beginning of the second chapter on Being-there.¹ Being and Nothing will turn out as the eternal logical prehistory and Becoming as the logical big bang. This big bang marks the beginning of the evolution of logical space, whose first relatively stable state is Being-there. In the second part I will comment on circular negation as the operation that drives logical evolution, and in the third part I will flesh out Hegel's conception of logical evolution in relation to the actual history of metaphysics by means of three prominent examples (Spinoza, Plato, Aristotle).

Hegel's *Logic* has a short initial and an elaborated subsequent programme. The initial programme can be summarised as the imperative: "Try to think purely, i.e. without presuppositions!" However, none of us can think without presuppositions, if only because our thinking is discursive, i.e. bound to a natural language with its grammar and vocabulary. The imperative must therefore be toned down a little, let's say to the wording: "Design a way of thinking that, if carried out in isolation, would be presuppositionless!" We may already surmise that this pure, presuppositionless thinking would have to be prelingual, i.e. nondiscursive.

According to its elaborated subsequent programme, Hegel's *Logic* in the end turns out to be a theory of the evolution of logical space, which can be read as a critical exposition of metaphysics. The various standard metaphysics each fix the logical evolution at a certain point, whereas Hegel's non-standard metaphysics only recognises the whole evolution, the whole logical process, as the logical-metaphysical truth.

In Hegel's own words, the initial programme reads (*Encyclopedia* §78A, GW 20.117–118):

Scepticism, as a negative science led through all forms of knowing, would offer itself as an introduction [into philosophical science]. But it would not only be an unpleasant path, but also a superfluous one, because the dialectical [which is the essence of scepticism] is itself an essential moment of affirmative science [...]. The requirement of such a consummated ["vollbracht": lit. *full-brought*] scepticism is the same as the one that science must be preceded by the *doubting of everything*, i.e. the *total presuppositionlessness* of everything. It [this requirement] is in fact consummated by freedom in the resolve *to will to think purely*, a freedom that abstracts from everything and grasps its [resulting] pure abstraction, the simplicity of thinking.

1 I will capitalise Hegel's terms for the initial thought determinations Being, Nothing, Becoming and Being-there in order to prevent misunderstandings that would otherwise be suggested by ordinary language.

2 Hegel is cited (always in my own translations) under the siglum GW or under the siglum TWA.

The quintessence of these remarks can be summarised as follows: Doubt everything or rather abstract from everything you believe and grasp what remains, the simplicity of thinking. In short: don't lose the sceptic.

1. The logical big bang and the first state of logical space

Let us begin with an important methodological distinction between pure thinking proper on the one hand and Hegel's and our theory of pure thinking on the other. Pure thinking takes place as a nonverbal *logical science* in what can be called the *foreground logic*, while our theory is the discursive background logic, which Hegel labelled the *science of logic*. This distinction proves to be necessary in order to correctly understand even the very first sentences with which Hegel opens the Logic:

[0] *Being, pure Being*, – without any further determination. In its [1] indeterminate [2] immediacy it is [3] equal only to itself and also not unequal to another, has no difference within itself or to the outside. [...] It is [4] pure indeterminateness and emptiness. – There is *nothing* [in small letters: “nichts”] to intuit in it [“in ihm anzuschauen”], if one can speak of intuiting here; or it is [5] only this pure, empty intuiting itself. There is also nothing to think in it [“in ihm zu denken”], or it is equally [6] only this empty thinking. Being, the indeterminate immediate, is [7] indeed *Nothing* [now capitalised: “Nichts”] and no more or less than Nothing. (GW 21.68–69)

These are *eight* truth claims or theorems, *one* claim of pure thinking or *logical science* and *seven* theorems of Hegel's theory of pure thinking, the *science of logic*. The claim of pure thinking cannot be adequately expressed in a well-formed sentence, but can only be intimated, for example, as Hegel does, in the one-word sentence “Being”. This one-word intimation lacks predicative form, i.e. it lacks the synthesis of subject and predicate. What is intimated is thus *a-synthetic*, just “the simplicity of thinking”, to quote Hegel.

The seven theorems or at any rate propositions that follow are predications about that which pure thinking nonverbally asserts, i.e. about Being. Being is firstly indeterminate, secondly immediate, thirdly incomparable, fourthly empty, fifthly an intuiting (of empty Being), sixthly a thinking (of empty Being) and seventhly Nothing. Here our methodological distinction between pure thinking and the theory of pure thinking proves to be required also in terms of content. Otherwise theorem (1), in which the indeterminacy of being is asserted, would contradict theorems (1) to (6), in each of which a determination of being is asserted. In particular, theorem (1) would contradict itself. These contradictions are prevented by reading propositions (1) to (6) as theorems of the science of logic about Being as it is conceived in logical science. We can already note an important consequence of this solution for later: Being is conceived differently in the science of logic than in logical science, namely as determined in such and such ways, whereas in logical science it appears

indeterminate to pure thinking. This means that pure thinking initially misconceives Being; it misses its determinateness.

Hegel does not argue in favour of theorems (1) to (6). He just states them. We must try to justify them ourselves from Hegel's initial programme, i.e. we must try to think without presuppositions. Let us therefore abstract from everything that could make a difference between different possible truth claims p , q , r , ... and retain only the minimal and neutral claim to sheer *being-the-case* as such: P . P claims only what is co-claimed in every possible truth claim. Verbally, it might be indicated as "Being!"

But what is it that is co-claimed in every truth claim? Here is a list of philosophical suggestions: According to the early Wittgenstein, that which is co-claimed in every possible truth claim is "the one logical constant", that which all propositions have in common, the essence of the proposition, the essence of the world (*Tractatus Logico-Philosophicus*, 5.47 ff). If we follow Kant and current voices such as Sebastian Rödl or Irad Kimhi, this one logical constant is the *I think*. A third suggestion could be given by Hegel on behalf of his fully elaborated philosophical system: The one logical constant is logical space in the entirety of its evolution, as it is epitomised in the Absolute Idea. A fourth answer is the negative one of the later Wittgenstein, who was critical of statements of essence and instead saw family resemblances at work that unite many things under a single term. He would certainly have said that there is nothing that is uniformly co-claimed in all truth claims and would have agreed with Hegel's proposition that Being is nothing (lower case), but without adding, as Hegel does, that Being is (the) Nothing (capitalised).

However, all such substantive answers are fraught with philosophical presuppositions and are thus not suited for the logical beginning. With any of them we would immediately lose the sceptic. So we should join Hegel, who both in his own name and in the name of the sceptic declares the logical constant we are looking for to be something utterly simple. Hence, Being, as claimed by P , is the absolutely reduced form of the common factor of all truth claims: an Aristotelian *asyntheton*, i.e. a thought without any synthesis.

Aristotle distinguishes between (1) synthetic (i.e. predicative) cognition and (2) asynthetic (i.e. pre-predicative) cognition and within the latter between (2a) asynthetic sensory perception (*aisthēsis*, e.g. of colours, sounds, etc.) (*De An.* II 6, 418a11-13) and (2b) asynthetic intellectual cognition (*noēsis*) (*De An.* III 6, 430a26f). In *Met.* Θ 10, where he discusses truth and falsity, he shows that there is no possibility of error for asynthetic cognition. Here the opposite of truth is not falsity, but ignorance, possibly due to non-existence. Take, for example, an impression of red: either you have it, then you recognise it without the possibility of error. Or you don't have it, then you don't know anything about it, either because there is nothing red nearby or because it is shadowed by something else, some screen or obstacle.

If we apply this lesson to the beginning of Hegel's *Logic*, we can justify his theorems (1) to (6), especially theorems (5) and (6), which are somewhat more difficult to justify than

theorems (1) to (4). Thus, firstly, Being is indeterminate for pure thinking, because we, in our science of logic have constructed Being by abstracting from all differences between truth claims. For us in our background science Being is of course determined in various ways. Secondly, Being is immediate for pure thinking, because pure thinking in the logical science must begin with it. For us in our background science it is of course mediated through abstraction, i.e. through negation. Thirdly, Being is incomparable for pure thinking, because it has no determinations in logical science. We in our background science of logic can of course compare Being with everything that comes to mind. Fourthly, Being is empty, because it is free of all determinations, distinctions and relations.

Now we need to resort to Aristotle's findings: Fifthly, Being is an intuiting, since for asynthetic entities the difference between subjective act and objective content is undercut. Otherwise the possibility of error would be given and the opposite of truth would be falsity as in bivalent predicative cognition. The act of intuiting Being and the intuited content are therefore one and the same. Sixthly, the intuiting of Being is not a sensory, but an intellectual intuiting, not an *aisthēsis*, but a *noēsis*, i.e. an act of thinking. In this way, the so-called opposition of consciousness between the objective *in-itself* and the subjective *for-consciousness*, which guides the *Phenomenology of Spirit*, is resolved in a short way (as it was resolved in a long way in the *Phenomenology*, namely at the end of the latter in absolute knowing). – And this concludes our justifications of theorems (1) to (6). Statement (7), that Being is Nothing, will have to wait and will later turn out not to be a theorem of the science of logic, but one half of a contradiction in logical science, which is cited but not asserted in the science of logic.

It became clear above that pure thinking misconceives pure Being, namely grasps it as something indeterminate, whereas in truth it is determined in many ways: as indeterminate, as immediate, as incomparable, etc. Unfortunately, in our discursive thinking we can only recognise but not remedy this misconception, for we cannot give pure thinking the advice to think Being *as such and such*. After all, pure thinking is asynthetic, pre-predicative and pre-discursive. So it must help itself under these restricted conditions, and the only available first aid is to negate its truth claim P , i.e. to negate Being, especially since negation is the only non-trivial one-place truth operation anyway. The first truth claim of pure thinking was “Being!”, and now pure thinking must assert “Not(Being)!” as its second truth claim. Pure thinking must therefore always already have been somehow acquainted with negativity. Whatever the exact relationship between Being and negativity, there must be *some* internal relationship between them.

But before we can think about this relationship, we are first confronted with two contradictions that we need to resolve. On the one hand, we have a contradiction between the two truth claims P and $\sim P$, i.e. “Being!” and “Not(Being)!”. Here we must appeal to a successive, i.e. time-like, but purely logical indexicality: first P is true, then $\sim P$ is true. On the other hand, we even have a self-contradiction in the second truth claim, $\sim P$, because in every truth claim, Being is co-claimed, and here it is also explicitly negated. In this precar-

ious case, we must appeal to a special form of time-like indexicality, namely instantaneous or infinitesimal indexicality, which is typical of becoming and especially of the moment of change. When a goalkeeper catches a ball, there is a moment when the ball is both not yet and already touching the surface of his or her gloves. As a result, the indexical sentence “The goalkeeper catches the ball” is a sentence that immediately falsifies itself according to its own meaning, because the moment of catching is instantaneous. You can catch, but you cannot catch for a while. On the other hand, the goalkeeper can hold on to the ball for a while until he or she sees an opportunity to throw it back into play. The sentence “The goalkeeper holds on to the ball” is therefore indexical, but not infinitesimally indexical.

We are currently uncovering part of the logical basis of time. In Hegel’s philosophy of nature, physical time is later made comprehensible on this logical basis. But let’s stick to logic. We first have the eternal, non-indexical truth claim P or “Being!”, then the infinitesimally indexical truth claim $\sim P$ or “Not(being!)”, which expresses an incoherent “mixture” of Being and negativity, a “mixture” known since Plato as *becoming*, which Hegel, like Plato, also calls *Becoming*. $\sim P$ or “Not(Being!)” thus expresses *Becoming*.

A consequence of this resolution of the self-contradiction of $\sim P$ is that *Becoming* expressed by $\sim P$ is unstable and immediately collapses into its opposite, *Being*, again, since $\sim P$ is an infinitesimally indexical truth claim. So, P or “Being!” is immediately valid again, but now as the negation of a logically indexical claim, thus itself as a logically indexical claim: $\sim\sim P$ or “Not(not(being))!”. Hegel calls this new, no longer eternal *Being*, which is expressed here and which will last for a logical “while”, *Being-there* (*Dasein*, determinate *Being*).

This leads us to an interesting distinction pertaining to logical science, i.e. to the foreground logic: between the foreground logic itself and the pure thinking that operates within it. In the foreground logic, *Being-there* is determined as the negation of *Becoming*, but pure thinking cannot yet detect this determination; it is confronted with it, but cannot yet highlight it as a logical content in its own right. This is because with *asynthetic* contents the opposite of truth is ignorance, and in the given case ignorance due to non-existence, since *Becoming* has annihilated itself in favour of *Being-there*. But *Becoming* takes revenge, so to speak, on its victorious successor by determining it. However, since *Becoming* is annihilated, pure thinking does not yet see this determinateness as such. The determinateness of *Being-there* as negation of *Becoming* is, as Hegel puts it, not yet “posited” (“gesetzt”) in *Being-there*, but at first only “an sich vorhanden”, i.e. only factually – and unnoticeably – there.

This is where Hegel’s technical terms “setzen” (“to posit”, Lat. “ponere”, see *modus ponens*) and “aufheben” (“to lift/cancel”, Lat. “tollere”, see *modus tollens*) announce themselves from afar. As for “aufheben”, etymologically speaking, “heben” means *to heave* and “auf” means *up*. You can heave up (raise, lift) the anchor so that your ship can set sail. You can heave up or raise (“aufheben”) something valuable from the ground to save and store it (“um es aufzuheben”). And you can heave away something disruptive, e.g. erase or lift (“aufheben”) a restriction. “Aufheben” in colloquial German thus means either (a) *to lift/*

erase or (b) to lift/raise or (c) to save and store. In Hegel's technical sense, this disjunction is transformed into a conjunction, so that "aufheben" now means (a) to lift/erase and (b) to lift/raise and (c) to save and store all at once. "Sublate" has been agreed as the English equivalent.

Traditionally, *ponere* (positing, asserting) and *tollere* (lifting, erasing) are opposites. But in logical science, some thought or state of affairs, *A*, asserted by pure thinking at a certain level of logical evolution must first be lifted, i.e. erased, in favour of a successor state, *B*, and then lifted, i.e. raised, to the level of *B* and saved as a determinateness of *B*, before it can next be also "gesetzt", i.e. explicitly posited (stored, catalogued and filed, so to speak) as a dependent aspect or a moment in *B*. Plain and simple *B* is thereby articulated as and enriched to *B*-plus, which displays a trace of *A* not only for us who look down to logical science from the vantage point of our background logic, but also for pure thinking that carries out logical science.

In consequence of this, the determinateness ("Bestimmtheit") of Being-there is factually there in logical science due to Becoming, but it is not yet distinguished as a *posited moment* in Being-there so that Being-there and its determinateness are still indistinguishable. Being-there is thus identical to its determinateness. Hegel calls this encompassing determinateness *quality*: "Determinateness thus isolated for itself, as determinateness that is [or as determinate *Being*], is *quality* – something quite simple, immediate." (GW 21.98). By extension of today's terminological habits, we could call it a *quale*, not a sensory *quale*, but the singular logical *quale*. Only here, then, with Being-there as the logical *quale* – not already in the chapter on pure Being – does the logic of quality actually begin. A second consequence is that, from the standpoint of pure thinking, Being-there *seems* to be first and immediate (GW 21.97). It *is* not immediate for us and not even *in logical science*, but (at first) *for* pure thinking. The negative side of Being-there (qua Non-Becoming, i.e. Non-non-Being) is indistinguishable from its positive side from the standpoint of pure thinking. Therefore, Being-there is both quality with a positive accent, labelled reality, and quality with a negative accent, labelled negation (in the sense of "privation"), still without any recognisable difference in logical science and for pure thinking (GW 21.98–99).

Logical evolution is the logical archetype of temporal evolution and the evolution of logical space is the archetype of the evolution of physical space. In this sense, infinitesimal Becoming can be likened to the cosmic big bang as the logical big bang. Being-there with its quality qua reality or negation is then the first relatively stable state of logical space, the logical space of quality and, more specifically, first of Being-there and finitude, then of the infinite and then of being-for-self. Finally, it passes over into the logical space of quantity.

For reasons that we must skip over, the logical space of Being-there next divides into two: one entity (*Daseiendes*) as the *something* and another entity as the *other*. (The something and the other negate each other in a new form of negation, which is no longer longitudinal, unilateral, time-like annihilation, but transverse, reciprocal, space-like shadowing. From the point of view of (the) something, the other is shadowed, as if (the) something

would completely fill the logical space of quality – and vice versa. Of course, there is also a new longitudinal, time-like negation in the logical space of Being-there, which accounts for the logical progression, namely *alteration* (Veränderung) instead of annihilation.

As interesting as all this may be, however, we must now return to Hegel's statement (7), whose justification or interpretation is still pending: Being is Nothing. I have said in advance that it is one component of a contradictory pair of statements in the science of logic to which this science must not commit itself so as to avoid inconsistency. In section C. *Becoming*, Hegel writes: "*Pure being and pure Nothing are therefore the same. [...] But the truth is just as much that [...] they are not the same, that they are absolutely distinct*" (GW 21.69). We thus have a contradiction in Hegel's own text between statement (7) that Being is identical to Nothing and a statement, (8), that Being is not identical to Nothing. But the science of logic, i.e. Hegel's and our theory, must be consistent. Therefore statements (7) and (8) cannot be *theorems* of the science of logic, but only quotations of a contradiction in logical science. This contradiction is of course the contradiction of *Becoming*, expressed as $\sim P$, i.e. "Not(Being)!".

Hegel himself also sees it this way: The truth of Being and Nothing, he says, is the "the immediate vanishing of the one in the other: *Becoming*, a movement in which both are distinct, but through a distinction that has just as immediately dissolved itself." (GW 21.69–70). As a result, we note that Nothing is that which has always already triggered the big bang of *Becoming* on the basis of pure Being. Being and Nothing thus form the eternal prehistory of logical evolution, *Becoming* is its point zero and Being-there is the first state of logical space.

2. Circular negation and logical evolution

I have to skip over a lot of interesting details, e.g. why *Becoming* has the inner structure that Hegel says it has, with *coming-to-be* and *ceasing-to-be* as its moments (GW 21.93), or why Being-there splits into two identical opposites, *something* and *the other*, which divide logical space between them. I must skip all this in order to be able to make some sketchy remarks about how the logical story goes on.

Hegel calls the successive logical contents *thought determinations*. They are both acts of pure thinking and successive states in the evolution of logical space. I will call them *urstates* for short. What drives the progression from one *urstate* to the next is negation. Negation is the only operation in logical science, but it is multifaceted because it interferes with what it operates on and thus changes from case to case. This is why logical science cannot be formalised. There is no way to deduce the logical *urstates* in an effective mechanical procedure.

We are all familiar with negation from ordinary discursive thinking and from its formalised treatment in propositional logic. In logical science, negation has so far appeared as a time-like annihilation, which then evolves into a transversal shadowing (and so on and so forth). We are also all familiar with double negation from everyday life and from proposi-

tional logic. Double negation in the usual sense, when applied to propositions, leads from a proposition p via $\sim(p)$ to $\sim(\sim(p))$ and thus back to p again. Thus for propositions double negation is equivalent to affirmation. With urstates, subtle changes may occur between p and $\sim(\sim(p))$, such as when pure Being is negated by the indexical, infinitesimal content non-being or Becoming, which immediately annihilates itself and gives way to an opposite indexical content. The result of this double negation, Being-there, may be a close relative of the original operand, indeterminate eternal Being, but is not strictly the same thing any longer; it is determinate and transient.

If these are the ways of double negation in the logic of urstates, they are already different from what we see in the logic of propositions. But things get really strange when we turn to double negation in a more challenging sense. In this new sense, negation does not, or not exclusively, operate on a given truth claim, p , but on itself. In other words, what negation operates on is something that it has already operated on. This is therefore a circular negation.

Set theorists have coined the term “non-well-foundedness” for this structure. However, they are of course not talking about non-well-founded negations, but about non-well-founded sets. Non-well-founded set theories are deviant, but no less consistent alternatives to ordinary set theory, in which the foundation axiom is replaced by an axiom that is incompatible with it. One of the non-well-founded sets that can occur in a deviant set theory is, for example, the unit set of itself, Ω , which is defined by itself being its only element:

$$\Omega = \{\Omega\} = \{\{\Omega\}\} = \dots = \{\{\{\dots\}\}\}$$

However, the idea of non-well-foundedness is older than set theory. It appears under various names in the history of philosophy. Fichte, for example, who is not concerned with negation, let alone set formation, but with the logical operation of positing, conceives of the I as a positing that posits itself, and of course the classical idea of *causa sui* is also a case in point if it is meant literally (and not deflationarily as in Spinoza, who defines the *causa sui* merely as that whose essence involves its existence). Hence, we are familiar from the history of philosophy and from set theory with various operations that were thought to be capable of also occurring in non-well-founded or circular ways, and we have just briefly touched on four of them:

- (1) non-well-founded causation, which leads to a genuine *causa sui*,
- (2) non-well-founded positing, which constitutes the I according to Fichte,
- (3) non-well-founded set formation, which results in non-well-founded sets, e.g. Ω , and
- (4) non-well-founded negation in Hegel’s logical science.

In Hegel, i.e. in logical science, there are many shapes of non-well-founded negation or, as I will briefly say, circular negation. The other-of-itself is its initial shape in the logic of

Being-there, shine is its initial shape in the logic of essence and the concept is its initial and fundamental shape in the logic of the concept.

This reveals an interesting little incongruence – or seeming incongruence – between the three books of the *Logic* and their respective opening chapters. Let us first look at the congruence. The first book begins with the chapter “Being”, which, as we saw, contains the logical prehistory of the evolution of logical space. The second book begins with the chapter “Shine”, which is a mere prelude to the logic of Essence and was later omitted in the *Encyclopaedia Logic*. The third book begins with the chapter “The Concept”, which precedes the substantial self-development of the concept as a “rather subjective reflection” (GW 12.53).

All three opening chapters thus have a preliminary special status. However, the basic operative variant of circular negation is introduced in the opening chapters of the logic of essence and the logic of the concept but not yet in the opening chapter of the logic of Being. Or maybe it is? The only available candidate would then be (the) Nothing. The Other-of-itself is only introduced in the second chapter, on Being-there. So, just as a precaution, we should keep all four candidates in mind: (the) Nothing, the other-of-itself, shine and the concept.

The general structure of circular negation, which underlies all these cases, can be illustrated by a strict analogy with the unit set of itself, Ω . However, there are two essential differences. Firstly, set formation operates on objects and generates sets, i.e. again objects, abstract objects. What is negated, however, are thoughts (truth claims) and, in the case of logical science, urstates. Instead of the identity of objects, circular negation is therefore concerned with the logical equivalence between thoughts or urstates. For an analogous explication of circular negation – let us denote it with the Greek letter ν – we must therefore use the biconditional instead of identity:

$$\Omega = \{\Omega\} = \{\{\Omega\}\} = \dots = \{\{\{\dots\}\}\}$$

$$\nu \leftrightarrow \sim(\nu) \leftrightarrow \sim(\sim(\nu)) \leftrightarrow \dots \leftrightarrow \nu \leftrightarrow \sim(\sim(\sim(\dots)))$$

These explications clearly specify what is meant by Ω and by ν , but they are not definitions, because they do not eliminate the definiendum in finite language, but use it again and again in the supposed definiens. Only in infinitely long formulations – in an infinite number of pairs of curly brackets with a hollow core, respectively in an infinite number of negation signs and pairs of brackets with a hollow core – would the definiendum disappear.

Nevertheless, Ω can be defined by means of a definite description, namely as the x with $x=\{x\}$; and, surprisingly, even circular negation can be finitely formulated, namely for propositions by a diversion via the truth predicate, i.e. by means of semantic ascent. It then turns out to be the antinomy of the so-called *Liar*: “The sentence you are presently reading or hearing is not true.” This brings us to the second difference between Ω and ν . Assuming the former is counterintuitive, but consistent. Assuming the latter leads to a contradiction. Assuming the former means accepting a somewhat strange abstract object as existing.

Assuming the latter means accepting a self-contradictory thought as true. And it gets worse. We cannot accept a contradiction as true, but must negate it as soon as we become aware of it. But if we negate the Liar sentence, we agree with it, because it negates itself. We are hopelessly trapped in the antinomy of circular negation. There is no regulated, principled way out, we can only turn our attention away and change the subject.

Nevertheless, Hegelian logical science operates with the antinomic circular negation as its motor that drives logical development. Pure thinking is essentially a constant flight from the antinomy. There is no safe place where it could rest. As soon as pure thinking pauses and invites us to frame the achieved state of logical evolution in a metaphysical theory, i.e. in a static description of logical space, our thinking gets inconsistent. According to Hegel's diagnosis, this is what has happened again and again in the history of metaphysics. And if Hegel is right, it also happens again and again today in the various approaches of analytical metaphysics. In the competing metaphysical theories, logical space, i.e. the totality of what can be the case and what can be thought, is always taken to be fixed and logical evolution is ignored.

In this sense, Hegel's science of logic can be read as a critical exposition of metaphysics, past, present and future. In the first instance, of course, it is an exposition of logical science, i.e. of the evolution of logical space. This evolution does not end with a fixed state of logical space, which Hegel would like to propose as a new candidate, superior to the competing candidates of standard metaphysics. Rather it terminates in the absolute idea, which epitomises the entire course of the evolution and its fluid stages. The absolute idea is thus a logical great circle, something like a grand logical spinning wheel that must turn forever, or rather a grand logical hamster wheel in which pure thinking constantly tries to outrun the antinomy. Hegel seems to hope that one only has to extend the antinomic circle of negation far enough and set it in constant motion in order to defuse the antinomy. I will leave open how reasonable this hope may be.

Instead, I would like to conclude with a few remarks on the basic guises of circular negation in logical science. Circular negation enters the stage in connection with the reciprocal negation of (the) something and the other, which shadow each other, i.e. with otherness. It is thus negation in the guise of the other that first appears circularly, in the logical urstate of the other-of-itself. At this logical stage, circular negation is still contaminated with immediate Being and will remain so until the end of the logic of Being. In the logic of Being, circular negation behaves as if Being were turned negatively against itself. In set theory, this would correspond to a system that admits different circular unit sets, x and y , such that $x=\{x\}$, $y=\{y\}$ and $x \neq y$. In this case, x and y would contribute something to their respective individuation other than being a circular unit set. The individuation would be the result of two factors: circularity and something immediate. In this weak set-theoretic system, there would not be Ω as *the* singular unit set of itself, because there would be several such sets.

In the logic of Being there is nothing immediate apart from Being. We therefore have to reckon with only one case of circular negation at each stage of logical development.

Nevertheless, immediacy is essential for the individuation of the respective thoughts or urstates. This is what is meant when we speak of a contamination of circular negation with Being throughout the entire logic of Being. In proceeding to the logic of essence, this contamination is overcome. In set theory, this would correspond to proceeding to a stronger set theoretic system in which Ω can be defined as the unique unit set of itself. Correspondingly, circular negation in the logic of essence is defined solely by its negative circularity. Nothing else, nothing immediate, is necessary or allowed to contribute to the individuation of the relevant thoughts or urstates.

At the beginning of the logical project, it seemed as if we had to find a minimal thought content in our background theory, the science of logic, which could be given to pure thinking and grasped by it as something immediate. With the transition from Being to essence, this supposed theoretical investment of ours turns out in retrospect to be a pure profit. Being, that is, turns out to be mere *shine*, which, like *Schein* in German, can be either a veridical seeming or an illusion, and shine is that which comes along with empty circular negation. The shine of immediacy is an effect of circular negation.

Still the mediating operation itself, i.e. negation, is something we took over and adapted from the propositional calculus. This is one last remainder of immediacy that infects even the pure circular negation in the logical sphere of essence. But by the end of the logic of essence and with the transition into the logic of the concept, even that last remainder of an ostensible immediate investment on our part vanishes. The concept is by definition that operation which is identical to its base or input and to its result or output. Simultaneously, negation is defined as the activity of the concept and no longer needs to be taken from propositional logic. Everything has turned into theoretical profit now. All ostensible investments have dissolved. We need no longer look for the propositional calculus in order to understand negation. On the contrary, if we understand the structure of the concept, we will gain a new and profound understanding of propositional negation. At the end of the logic of the concept, with the absolute idea, this should become totally clear. At least that is what Hegel promises.

Last but not least, what about (the) Nothing? It is the absolute idea compressed to an infinitesimal logical point, just as, according to the general theory of relativity, the physical universe at the Big Bang was compressed to an infinitesimal spatial point. More precisely, (the) Nothing is the absolute idea, insofar as this is the spinning great circle of negation compressed to punctiform absolute negativity. Being, by the way, is on the one hand quite the same: the absolute idea compressed to a logical point. But on the other hand, Being is the absolute idea, insofar as this is the totality of what is real compressed to punctiform immediacy.

3. Logical evolution and the history of metaphysics

As explained, Hegel's *Science of Logic* presents the evolution of logical space and can subsequently be read as a critical exposition of actual and possible standard metaphysical

theories, all of which regard logical space not as evolutionary, but as something fixed. As a result, according to Hegel's diagnosis, they confuse a state in the evolution of logical space with logical space as such. Hegel himself, on the other hand, says that the true is the whole and thereby means the entire process of logical evolution, which he compares to the life of a plant whose successive states – bud, blossom, fruit – replace one another in the organic process (see the preface to the *Phenomenology of Spirit*, GW 9.10). In this respect, a standard metaphysics is like an imaginary botanical theory that recognises only the bud or only the blossom or only the fruit as the whole truth about the plant. In the following, I will try to illustrate how this is to be understood using three paradigmatic examples: Spinoza, Plato and Aristotle.

When Hegel speaks of one-sided metaphysical systems, he is primarily thinking of the rationalist theories of the early modern period, which Kant had already fundamentally criticised. At the same time, however, he also takes into account Jacobi's diagnosis that it was one of the early modern rationalists, Spinoza, and not Kant or anyone else, who had put forward the unsurpassably consistent system of philosophy. According to Jacobi, this was all the worse for systematic philosophy: its most consistent system amounted to a metaphysical fatalism without a personal God. He therefore wanted to free himself from Spinoza with a *salto mortale* into the belief in freedom and God. In the series of standard metaphysical theories, Hegel accordingly grants Spinoza a high rank, which corresponds to the end of his objective logic or logic of essence. Against Jacobi, however, Hegel sets out to show that from there – from the philosophy of substance as *causa sui* – one can proceed within systematic philosophy and without the hint of a logical somersault into the logic of the concept. In this respect, Spinoza's metaphysics corresponds to the pinnacle of Hegel's objective logic, i.e. the whole logic of Being and of essence. Since, moreover, the progression from substance to the concept takes place smoothly, and since the concept is already the pinnacle of logical evolution in a nutshell, it ought to be in Hegel's sense to say that Spinoza already comes very close to the final logical truth.

Like all important (pre-Hegelian) metaphysics, however, Spinoza's system is not a unified whole and is less consequential than Jacobi believed. For if one halts logical evolution at a certain interim stage, one obtains an inconsistent state of logical space, and if one makes this the basis of a metaphysical system, one must try to overcome the inconsistency through non-consequentialism. This corresponds to the finding that two different chapters of the logic of essence can be read as a critique of Spinoza: both the first chapter ("The Absolute") and the third chapter ("The Absolute Relation") of the third section ("Actuality"). The first chapter deals with the state of logical space, to which Spinoza was actually entitled, under the term "the absolute". The third chapter deals with the state, which Spinoza aimed at in his struggle for consistency and completeness, under the classical term "substance".

What Spinoza is entitled to is the absolute as the abyss ("Abgrund", lit. *off-ground*), into which all determinations have disappeared. Already at the end of the logic of Being,

where logical space has reached the evolutionary stage of absolute indifference, Hegel associates Spinoza's substance with such an abyss. He expresses himself very cautiously, though: "Insofar [!] as absolute indifference may [!] seem [!] to be the fundamental determination of Spinoza's substance", this latter could be seen as the abyss of all determinacy (GW 21.380). Hegel adds: "With Spinoza [...] the attributes [...], then also the modes [...] come about quite empirically" (GW 21.381). Later, in the chapter on the absolute, he shows how a more adequate conception of the absolute allows us to proceed internally to attributes and modes.

At the end of the logic of essence, logical space appears as the singular substance in a more Aristotelian sense, which Spinoza must have had in mind as an ideal. Here substance is *energeia*: actuality and activity, power over the wreath of its accidents, and *causa sui* in interaction with itself as active and as passive substance, which only exchange their roles in the interaction. Spinoza's metaphysics, however, remains in an indissoluble tension between substance as abyss and substance as actuality and can accordingly be criticised internally, on its own terms. Nevertheless, this metaphysics is more advanced than other candidates from the early modern period.

In Hegel research, the position is sometimes taken that the critical exposition of metaphysics ends with the logic of essence and Hegel then moves on to his affirmative doctrine (see e.g. Theunissen 1978 and Falk 1983). There is some truth in this, but in my view the exposition of metaphysics continues, albeit in a less critical manner. The first chapter in the logic of the concept, on the concept as such, is indeed very affirmative. Here, according to my interpretation, the logical foundation of Plato's theory of Forms is developed and exposed. But then the concept divides into judgement and thus falls back into the sphere of finitude (cf. Enc. § 168, GW 20.184). The evolution of logical space, which already seemed to terminate in harmony, sets in again at the level of the concept.

At this stage of logical evolution, "all things are a judgement" (Enc. § 167, GW 20.183). Things that are judgements have predicative structure and are therefore facts. This is remarkable because it helps us to see that Hegel's *Logic* is a critical exposition not only of the metaphysics known at Hegel's time, but of all possible metaphysics. For an ontology of facts had not yet been explicitly formulated; this only happened later in the new age of Fregean predicate logic.

At the next stage of logical evolution, "everything is a syllogism" (Enc. § 181A, GW 20.192) or an inference. As far as I know, an inferential ontology of facts has not yet been explicitly propagated, even to this day. If you want to be original in analytic metaphysics, here is a blueprint for a new type of ontology, albeit one that, according to Hegel, can no more be the last word in philosophy than all other standard metaphysical theories. Only at the end of the logic of the concept is the promised land of peace and harmony, which was anticipated in its first chapter, actually reached, namely in the *absolute idea*, in which the entire logical process is epitomised. – Plato's term for the Forms is *eidos* or *idea*, and in German the theory of Forms is called "Ideenlehre", *doctrine of ideas*, which would be

misleading in English because one would immediately think of subjective Lockean ideas, not of Platonic Forms. But Hegel very carefully chose the basic term of Plato's philosophy, *idea*, as the term for the culmination of his own *Science of Logic*, as if he wanted to call out to us: *It's Plato's philosophy, stupid!*

Hegel's philosophy, however, is not only a variant of Platonism, but just as much and even more a variant of Aristotelianism. It is of course astonishing that this should be possible. For Aristotle was a very harsh and even unfair critic of his teacher, from whom he had learnt much more than he wanted to admit, and whom he nevertheless surpassed philosophically in important respects. Hegel recognises no one more than Aristotle as a genuinely speculative thinker in his specific sense of the word. If his *Science of Logic* is a critical exposition of metaphysics, then Plato and especially Aristotle are largely excluded from criticism.

This goes so far that Hegel, just as he had his *Logic* terminated in Plato's *idea*, has his philosophical system as a whole end with Aristotelian *nous*, i.e. spirit. Significantly, it is not Hegel who has the final word in his system, but Aristotle, and not in a German paraphrase, but in Greek without translation. The passage stems from *Metaphysics* Λ 7 (1072b19-32) and is about the intellect or spirit, *nous*, which thinks itself by touching and grasping itself in thought, and which is active and divine in this. Its activity or actuality, *energeia*, is life, and precisely the life of God or, as Hegel would prefer to say, of the absolute spirit. Here too, he brings Plato and Aristotle together when he speaks in his own last sentence of the *Encyclopaedia* (§ 577, GW 20.572) of "the eternal idea in and of itself", which "is active and generates and enjoys itself eternally as absolute spirit".³

But how exactly does Hegel relate the teachings of Plato and Aristotle and what exactly is the theoretical gap between the two that needs to be bridged? There are a number of gaps, but let's focus on the doctrine of Forms and first recapitulate some basic theorems of Plato.

Firstly, Forms are the intelligible supra-spatial and eternal essences in which the perceptible spatiotemporal things participate on loan and are thereby constituted as what they are. This theorem expresses Plato's specific type of *essentialism*. Secondly, the Forms are separate from the spatiotemporal things whose essences they constitute. This is the theorem of *chorismos*, i.e. of the separateness or transcendence of Forms. Thirdly, the Forms compose a unified order, *kosmos*, of more and less generic Forms. At the top are the *megista genē*, the most universal genera, such as being, identity, difference, rest and motion (see the *Sophist*). They participate in each other in a continuous win-win situation: Being lends being to identity and in return receives its identity from identity, and so on. Below the *megista genē*, the cosmos of Forms branches out as a descending tree of ever more specific forms. It is this descending tree that Hegel develops in its logical basic form in the chapter on the concept. Every form, for Hegel every concept, is (a) universal and subsumes particular concepts.

³ „Spirit“, in German „Geist“ (cf. Engl. „ghost“), is both Hegel's word for the Aristotelian *nous* and the common German translation of biblical *pneuma*, Hebrew *ruach* (*ruakh*).

Moreover, (b) every concept is a particular one, which is co-ordinated with other concepts, and (c) every concept is also a well-defined individual concept. In its dialectic, this triad of universal, particular and individual constitutes the content of Hegel's chapter on the concept.

Fourthly, the Forms are completely intelligible (even if only with difficulty for humans, cf. Plato, *Pol.* 517bc). They can be grasped intellectually and then defined on this basis by trained philosophers or dialecticians in a discursive categorisation. Fifthly, the Forms are not abstract entities, but concrete, active, powerful universals. They have spirit, life and soul and also motion (*Soph.* 249ab), a motion that must of course be conceived as supra-spatial and supra-temporal.

Aristotle, too, firstly assumes substantial forms, *eidē*, by virtue of which things are what they are. In this respect, he also advocates an essentialism. But secondly, he rejects the *chorismos*. The substantial forms of things are not separate from them. Thirdly and most importantly, he only recognises forms that are species, so that the forms cannot arrange themselves in a tree-like manner; they are all coordinated with one another on the same level. Fourthly, he agrees that they are intelligible and then definable. But fifthly, there are concrete, active forms only on the specific level, which is also the individual level. Nothing universal is a substance, says Aristotle, rather everything universal is the product of our abstraction.

His main argument against substantial universals in *Metaphysics Z* 14 is the following: If there were a substantial generic form, say *animal*, that occurred identically in horses and humans, then it would have to be quadrupedal in horses and bipedal in humans, which is contradictory. Therefore, there can only be substantial specific forms that are realised in suitable matter as many identical individual forms. Hegel develops the logical basis for this in the logic of being-for-self, where he argues that the *one* repels itself to many identical ones, and that their complete sameness in turn attracts them back into the one of attraction.

Extra-logically, this corresponds to the life process of a species that reproduces into many individuals through procreation and birth and reunites them at death into the one eternal species. (Aristotle regards species as eternal). In this respect, Hegel, who rejects the *chorismos*, shows with Aristotle against Plato how there can be immanent substantial forms. On the other hand, he adheres, with Plato against Aristotle, to the active and substantial universal and tries to resolve the contradiction criticised by Aristotle through his dialectic. The universal *animal* is different from itself in horses and in humans and in this difference is identical with itself in its own respective other.

Whether this Hegelian formula allows for a material solution is of course questionable. But Hegel's attempt to do justice to both Greek classics and to reach a metaphysical compromise between them should have become recognisable here. Incidentally, his admiration for classical Greek thought also includes Anaxagoras, who had brought the doctrine of *nous* to Athens. (Socrates reports on this in *Phaedo* 97b ff.). Let me therefore conclude with a quotation in which Hegel celebrates Greek philosophers along with French revolutionaries, and not in his youth in Tübingen when the storming of the Bastille took place, but as an established bourgeois professor in Berlin in his lectures on the philosophy of history (TWA 12.529):

As long as the sun stands in the firmament and the planets revolve around it, it had not been seen that man [der Mensch] stands on his head, i.e. on thought, and builds reality according to it. Anaxagoras had first said that the νοῦς governs the world; but only now [i.e. in the French revolution] has man come to realise that thought should govern spiritual reality. This was thus a marvellous sunrise. All [!] thinking beings joined in celebrating this epoch. A sublime emotion prevailed at that time, an enthusiasm of the spirit shuddered through the world, as if the actual reconciliation of the divine with the world had only now come.

References

- Falk, H-P. (1983). *Das Wissen in Hegels „Wissenschaft der Logik“*. Freiburg i. Br. and Munich: Alber.
- Hegel, Gottfried Wilhelm Friedrich (GW). *Gesammelte Werke*, in Verbindung mit der Deutschen Forschungsgemeinschaft herausgegeben von der Rheinisch-Westfälischen Akademie der Wissenschaften, Hamburg: Meiner, 1968 ff. (= Akademieausgabe).
- Hegel, Gottfried Wilhelm Friedrich (TWA), *Werke in 20 Bänden*, auf der Grundlage der Werke von 1832 bis 1845 neu ediert, Redaktion: Eva Moldenhauer, Karl Markus Michel. Frankfurt am Main: Suhrkamp, 1969–1971 (= Theorie Werkausgabe).
- Theunissen, M. (1978). *Sein und Schein. Die kritische Funktion der Hegelschen Logik*, Frankfurt am Main: Suhrkamp.