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# Hegel on the Logical Big Bang and the Evolution of Logical Space*

Anton Friedrich Koch**

**Abstract:** Since Aristotle, metaphysics has taken upon itself the task of laying bare the general structure of logical space and engendering various competing topologies of logical space. Hegel is the one exception in the history of metaphysics, for his metaphysics, in which he portrays logical space as subject to evolution, is highly unconventional. This paper shows why we should follow Hegel during his first logical steps aiming at the idea of Dasein, and then analyzes how logical evolution is supposed to go on from Dasein by means of circular negation. Finally, this paper also connects Hegel's non-standard metaphysics with standard metaphysics on the one hand and with post-metaphysical hermeneutical philosophy on the other hand.

**Keywords:** Hegel; metaphysics; logical space; circular negation

**摘要：**自亚里士多德起，揭示逻辑空间的普遍结构，并创制出不同的逻辑空间拓扑结构就是形而上学的任务。黑格尔的形而上学将逻辑空间刻画为受进化所支配，这是高度非标准的形而上学。本文论证了为什么我们应该在黑格尔进展到定在理念的第一个逻辑步骤的过程中遵从他，进而分析了逻辑进化如何需要借助循环否定的方式从定在那里继续开展。最后，本文将黑格尔的非标准形而上学与标准形而上学和后形而上学的解释学哲学关联起来。

**关键词：**黑格尔；形而上学；逻辑空间；循环否定

## Introductory Remarks

Aristotle distinguished between three kinds of sciences: practical, technical and theoretical, and again, among the theoretical sciences, between a first one (metaphysics), a second one (physics) and a formal one (mathematics) (Met. E2, 1026 b 4f., and E1, 1026 a 10ff.). We can

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** Anton Friedrich Koch, Professor, Department of Philosophy, Heidelberg University, Heidelberg.

still make some use of these distinctions today. Theoretical sciences are formulated from a universal and eternal point of view or from no point of view at all, which means that they must not make essential use of indexical expressions. Mathematics, theoretical physics and metaphysics arguably are still our prime examples. I put to one side the technical sciences, including the so-called life-sciences, which may be regarded as applied theoretical sciences plus thorough plumbing plus (perhaps) some half-silk ideology. Practical sciences will coincide more or less with the classical humanities and will be centred on hermeneutical knowledge as it is exercised in historical, linguistic and psychological interpretation. In interpretation we map human standpoints onto human standpoints, but not, as in physical relativity theory, by means of precise mathematical transformation equations; rather, in interpretation we have to rely on rules of thumb for saying what some person did or said or thought in our own words.

Metaphysics, which Aristotle counted first among the theoretical sciences, has always set itself the task of laying bare the general structure of logical space and has indeed come up with very different competing topologies of logical space. Parmenides believed that logical space – the totality of what might be the case and might grasped in thought – had not much of a structure at all. He must have seen very clearly that negation was the source of contradiction and antinomy and then must have wrongly inferred that logical space was off limits to negation and its ilk, i.e. difference, plurality and becoming. Plato conceived of logical space as the ideal cosmos of forms plus a shadowy court yard where being and non-being mix to constitute becoming. David Lewis in our time told us that logical space was the set of possible worlds, big concrete particulars in splendid causal and spatiotemporal isolation from each other. But all of those metaphysicians thought of logical space as a fixed and invariable totality, perhaps allowing for becoming and change within its boundaries, but being itself not subject to becoming and change.

Hegel is the one exception in the history of metaphysics, his metaphysics being highly non-standard in that he portrays logical space as subject to evolution. Of course, the evolution of logical space is not a temporal, but a purely logical evolution. But that need not trouble us much. After all, there are well-known examples of non-temporal series and successions, like the arithmetical series of natural numbers, or logical sequences of sentences in arguments. In some such sense, logical space must, according to Hegel be seen as a logical succession of states. The succession starts, given a roughly Parmenidean basis of pure being, with the logical big bang of becoming which then instantaneously collapses into the first relatively stable state of logical space called “Dasein” by Hegel (being there, determinate being).

In today's talk I want to do two things. First I want to show in a detailed argument why we should go along with Hegel in his first logical steps up to the idea of Dasein (determinate being). In the second part of my talk I would like to give a rough sketch of how logical evolution is supposed to go on from there by means of what I shall call *circular negation*. Finally, in my very short concluding remarks I will try to relate Hegel's non-standard metaphysics to standard metaphysics on the one hand and to post-metaphysical hermeneutical philosophy on the other hand.

## I. The Logical Big Bang and the First State of Logical Space

Let us forget everything I have said so far, and let us look at things from a very elementary point of view. Hegel's *Logic* may be defined as the (unique) presuppositionless theory; and our working hypothesis is that there is such a thing as the presuppositionless theory or, as Hegel also calls it, pure thinking. The *Logic* is presuppositionless in all relevant respects. It does neither presuppose a doctrine nor a method nor a terminology. So the Pyrrhonian sceptic is invited to join in the project. The project does not even presuppose a subject matter; thus, in the beginning we do not even know what the theory is going to be theory about. As a matter of fact, it will start with being, so it might be an ontology; but it's called "logic" by Hegel, so it could as well be a theory of thought. Let's leave that open. The *Logic* will have to determine its subject matter in due course and, in fact, step by step.

Our working hypothesis belongs to what Hegel calls *external reflection* and what I shall call our background logic. The presuppositionless theory itself or pure thinking, then, is the object logic. In the beginning we have to make a distinction between three possible levels of interest: Ground floor is the subject matter of the object logic, whatever it may be; second floor is the object logic or pure thinking, which is the subject matter of our background logic; and third floor is our background logic. Let us pretend that we are developing the object logic completely on our own, without any help from Hegel. But it will soon become clear that what we are thereby developing is identical to Hegel's *Logic*. If not, never mind; we will then be developing our own original theory.

Here is a sketch of how it might work. A theory is a non-empty set of truth claims, its theorems. Obviously, the starting theorem of the presuppositionless theory must state a logical singularity and one that cannot be denied effectively, something which is perfectly neutral between all possible standpoints. So, in our background theory, we will have to construe presuppositionlessness as maximal neutrality. For the sake of our working hypothesis, we must

therefore posit a common factor which is part of what is stated in any statement whatsoever, something like veridical being as such or pure *being the case*.

A short glance at Wittgenstein's *Tractatus* may serve to illustrate the point. Wittgenstein also posits 'that which *all* propositions, according to their nature, have in common with one another', 'the general form of proposition' (*Tractatus*, 5.47). He calls this common factor 'the one logical constant' and says of it that it 'is the essence of proposition' as well as 'the essence of the world' (5.471, 5.4711). Again, he identifies the *essence of proposition and the world* with the *logical form of picturing* and also with the *form of actuality* (2.18). He adds atomic objects of various types to the picture, funny objects of which no examples could possibly be given. For considered in isolation, Wittgenstein's objects are not actual yet. It is the logical constant qua form of actuality that combines them into facts and thereby actualizes them. As actualized they are no objects any longer but rather dependent aspects of facts, and that's why Wittgenstein says that the world is the totality not of (unactualized) objects, but of facts. The logical constant together with the as yet unactualized objects opens up logical space, the totality of everything that can be the case and can be thought and said. But the logical constant by itself cannot be "said" (and neither can the objects); it has to "show" itself, as Wittgenstein infamously says, thus indulging in a form of the myth of the given.

Now back to our own project. Let's call the logical constant, i.e. that, which all truth claims have in common, "being". We could have called it anything we liked, e.g. "blabla", but "being", or "pure being", will do. It's a nice and telling expression, as long as we do not associate the idea of existence with it. What we should associate with it is rather the idea of veridical being or being the case, because in every possible truth claim something or other is claimed to be the case.

The first theorem of the object logic then states just being, pure being, without any further determination. But we must acknowledge immediately that we do not really have a theorem here. Theorems are statements. They have propositional form and are at least bivalent, and if we stick with classical logic just that, bivalent, i.e. true or false. Statements thus come in pairs of contradictory opposites, therefore any statement whatsoever has an alternative which could be stated instead, viz. its negation. But the first theorem of the object logic must state a logical singularity, something which is common to all statements and thus has no alternative. The one and only logical constant we called "being" therefore cannot be a propositional content, but must be something more simple – and yet a complete and saturated content of thinking. Contents of this elementary type I call *pre-propositional states of affairs* or *urstates* for short. Be-

ing, then, is an urstate, and if we want to associate it with a direct linguistic expression, we do not know what to do. Our term "being" is a singular term corresponding to that-clauses in the case of propositional states of affairs (or propositions for short). If we want to state a proposition, we just utter a sentence, e.g. "Snow is white". If we want to talk about a proposition, we may use a that-clause built from the respective statement, thus: "That Snow is white is something you ought to know". In the case of our pre-propositional logical singularity we have the term "being" corresponding to a that-clause and we might, in a rather contrived way, use that term as a one-word-sentence, thus: "Being!", in order to give some sort of linguistic expression to something which cannot be expressed adequately in language. It turns out that Wittgenstein was right in saying that the one logical constant which we call being cannot be said, but must show itself, which means that our working hypothesis forces us to join him in indulging (a bit) in the myth of the given. More precisely we should say that (not we in our background logic but) the object logic has to start with something given or something immediate, viz. pure being.

Being then is immediate. And it is totally indeterminate. When we coined the content *being* for our object logic, we abstracted away from everything that might give profile to a truth claim and might make a difference between some given truth claim and any other truth claim. So, with pure being nothing determinate is left over. Pure being is therefore so superlatively singular that it cannot even be compared to anything else, at least not with the conceptual resources of the object logic. Of course, we in our external reflection, i.e. in our background logic, can say a lot of things about being and compare it to other states of affairs. But for the object logic it is immediate, indeterminate and not a possible subject matter for making comparisons. In fact, for the object logic being is identical to logical space. Logical space for pure thinking thus turns out to be strictly Parmenidean: just *being* without any external or internal difference or modification.

Of course, that is ridiculous in a way. We in our background logic know for sure that logical space comprises much more than just pure being. Considered as pure being, logical space would in fact be empty logical space and thus no real (logical) space at all. Like Plato and Aristotle, therefore, we will feel a strong urge to go and save the phenomena against the Parmenidean verdict. But let us keep cool and wait a minute or two.

Being, as we have seen, would be immediate, indeterminate, incomparable and empty, the empty or zero-content so to speak. What kind of cognition would correspond to that content? Not discursive thinking, for discourse is propositional. Not sensory intuition, for we ab-

stracted away from all possible sensory information. So we are left with something like intellectual intuition, i.e. with some kind of thinking we might as well call intuiting; it does not matter much which way we call it. Notice that all of this is an effect, or artefact, of our working hypothesis that there is the unique presuppositionless theory. We are by no means turning dogmatic here, but are still going along with the sceptic, if only he or she is willing to play the game of our working hypothesis and see what will happen.

Next consider the logical category of urstates that I introduced a minute or so ago. Urstates are known by acquaintance, as Russell would have said, not by description, if they are known at all. They are hybrids, of a kind, between objects and states of affairs, and they have been present in many varieties throughout the history of philosophy. They are like objects in that they are supposed to be distinct entities (not related inferentially to one another), and they are like states of affairs in that they are supposed to be complete contents of cognition. First rate examples of sensory urstates would be Humean impressions, and first rate examples of intelligible urstates would be Platonic forms (though their contents may, according to Plato, be transposed into a propositional key by dialecticians whose craft it is to give definitions of the forms and thereby to make explicit their hidden inferential relationships after all).

What has not been so prominent in philosophical theory building is the fact that ustates, considered in their most simple form, do not provide for the possibility of distinguishing between a knowing subject and a known object. Objectivity is independence of what is the case from what is believed or stated as being the case. So objectivity goes together with fallibility in epistemology and with bivalence in formal logic. Where, on the other hand, the possibility of error has not been provided for, as in knowledge by acquaintance, i.e. knowledge of urfacts, there is no objectivity either, and therefore no subjectivity, for that matter. The content *being* therefore is, qua urstate, neither a subjective belief content nor an objective fact, but an urfact beyond objectivity, fallibility, bivalence and subjectivity. The content *being* thus is identical to the act of intuiting or thinking *being* and at the same time identical to the state of affairs that is intuited or thought of. We had been making a distinction between three levels of interest: ground floor was *being*; second floor was the object logic (pure thinking); third floor was our background logic (external reflection). We now see that ground floor and second floor merge; the object logic, i.e., merges with its own subject matter. At least at its beginning the object logic is pure thinking of being as well as pure being itself, all in one.

But it's getting time to try to save the phenomena at last. Even if in the last analysis there should be nothing more than pure being, thus no plurality of things and no becoming, then at

least the appearance of plurality and becoming would have to be accounted for in some way or other. So the object logic should not stop with pure being but should go on. It should go on for another reason as well. Our working hypothesis has it that there exists a unique presuppositionless theory. But a theory with only one theorem (and not a real, propositional, bivalent theorem at that) would be rather disappointing and would hardly deserve to be called a theory. Therefore we, on behalf of the object logic, have to move on to a second content or second quasi-theorem of the object logic, and we have to do it in such a way that the sceptic may go along with us, i.e. in accordance with our working hypothesis. A theorem is a truth claim, and the quasi-theorem "Being!", even though it can hardly be said to be a *claim* to truth (because truth claims are bivalent, whereas and the content being is monovalent, so to speak) is supposed to be true by the object logic. In order to move on to a second object logic content we therefore need something like a truth operation or a truth function, operating on being and leading to something else. But there are only four possible one-place truth functions and three of them won't help. We have the identity truth function which maps true onto true und false onto false and thus leaves everything as it is. We have the verifier function which maps both truth values onto the true, and this again would leave *being* as it is. We have the falsifier function which maps both truth values onto the false; but of course we do not want our object logic to state something false. So we are left with negation as the only viable candidate, which maps true onto false and false onto true.

But now we see immediately that we have to take resort to the idea of logically indexical contents. Temporally indexical sentences like "the sun is shining in Warwick", change their truth values over time. Logically indexical *sentences* do not exist, formal logic being valid universally and eternally. But the urstates that our object logic is dealing with had better be logically indexical *contents*, true at one point in a purely logical succession and development and false at others, which of course means that logical space is not logically eternal and unchangeable, but that it evolves, in a purely logical evolution. For we have to go on in our object logic from our initial content *being* to its negative opposite, non-being, a quasi-theorem which we can express by the two-word-sentence "Not(being)!". So, it seems that first, in a purely logical succession, the content *being* is the case and in fact is all of logical space and then the content *non-being* is the case and is all of logical space. First, the quasi-theorem "Being!" is true and then the quasi-theorem "Not(being)!".

But now we have at least two problems here, a minor and a major one. The minor problem is that we have taken the operation of negation from propositional calculus and do as yet not know how it might work with urstates. That means negation must still be tailored to suit

urstates. Our major problem is that the initial content *being* cannot be logically indexical. It is by definition a content valid not only at all physical times and physical places but also at all logical times and places, i.e. throughout all of logical space and across all its logical evolution.

To the minor problem there is an easy solution. Propositions may exist without obtaining, as witness the proposition *that Warwick is in Italy*. For urtates, on the other hand, existing and obtaining are the same. So, to negate an urstate is to annihilate it, i.e. to expel it from logical space; and here again we see (or begin to see) that in our object logic logical space cannot be fixed once and for all. Moreover, in the simplest and earliest cases, annihilated urstates will leave no traces in logical space; i.e. they will not be "aufgehoben", sublated, in any positive sense. Sublating is easy with propositions. That it was – let's say – raining an hour ago is now sublated negatively, not obtaining any longer, but it is as well sublated positively, in my memory. No such thing as positive sublation is possible with urstates, at least not in the initial stages of the evolution of logical space. That is why Hegel has some theoretical work to do on behalf of sublation, which he wouldn't, were he working with propositions instead of urstates.

Our minor problem thus is solved: the negation of an urstate is its annihilation, the negating opposite of the negated urstate being its victorious successor in logical space. But the major problem is still there: pure being is by definition a logically eternal content and cannot be effectively negated. Much the same thing must be said, if we reflect on our second quasi-theorem "Not(being)!" This quasi-theorem explicitly negates *being* which it, like any other theorem or quasi-theorem, affirms by implication. So, the quasi-theorem "Not(being)!" is self-contradictory and therefore false, and we must beware that our object logic not state a falsehood.

But now think of Graham Priest's dialetheism, i.e. the view that there are true contradictions. If that is so, then pure being and its negation, non-being, could perhaps coexist and co-obtain in logical space. But appealing to dialetheism is legitimate, if at all, then only a as a last resort. Anyway, let's appeal to dialetheism as a kind of litmus paper for detecting and handling a very fundamental duality, the duality between being and becoming. Dialetheism, we will say, is not true for being, i.e. for being in general, but true only for the limiting, infinitesimal special case, not true of *being*, but of *becoming*. If a ball hits a wall, there will be a moment in time, when the ball first touches and still does not yet touch the wall: the moment of change. Let's take this lesson of temporal change and carry it over to the object logic. Then we will have to say that our second quasi-theorem "Not(being)!", expressing non-being, is an infinitesimally obtaining urstate only, annihilating itself immediately, and the non-being it

expresses is indeed that: the great alternative to being. We call it *becoming*. Its pure initial logical form is what I mean be the logical big bang.

The bang of becoming lasts only for a logical moment and gives way immediately to its contradictory opposite *being* again. But infinitesimal contents are a subclass of indexical contents, and the contradictory opposite of an indexical content is an indexical content. So *being* now, as the opposite and victorious logical successor of *becoming*, is not pure and eternal *being* any longer, but indexical *being*, i.e. *being*, cast into the logical evolution. It may last for a logical while, but not forever. It's what Hegel calls *being-there* (Dasein, determinate being).

## II. Circular Negation

I have to skip over a lot of interesting details, e.g. (1) why the urstate *nothing* gets inserted between pure being and becoming and how the relation between being and nothing is to be understood, (2) why becoming has the inner structure that Hegel says it has (with Entstehen and Vergehen as its aspects), (3) why Dasein is the singular logical quale (called *quality* by Hegel), (4) why Dasein splits into two identical opposites, *something* and *the other*, which divide logical space between them. I have to skip over all that in order to be able to make some very sketchy remarks about how the logical story goes on.

The only operation in the Logic of Science is negation, but there is no formalism of negation and thus no possibility of a mechanical effective procedure for deducing all logical urstates in due succession. This is so because the operation interferes with what it operates on and thereby changes its shape from case to case. This is so already for simple negation and much more so for what Hegel calls, somewhat ambiguously, double negation. Simple negation, as we saw, is an attempt at the annihilation of an urstate. Dasein, in that simple sense, is what negates and annihilates becoming and what is determined (qualified) by becoming in return. This is serial negation: An urstate is negated by its successor, and the successor is determined by the perishing predecessor, determined as was the predecessor was not, as its negative. But then, between *something* and the *other*, we get parallel and reciprocal negation and therefore parallel and reciprocal determination. Here, in this special case, determination is not only the inverse of negation, but is as well negation itself.

Now double negation. Let me first try to disambiguate. Double negation in the usual sense, if applied to propositions, leads from a proposition "p" to "~(p)" to "~(~(p))" and thus back to "p" again. Thus for propositions double negation, at least in the usual sense, is equivalent to affirmation. With urstates, subtle changes may occur between "p" and "~(~(p))", as when

pure being gets negated by the indexical, infinitesimal content *non-being*, which immediately annihilates itself and gives way to an opposite indexical content *being*. The result of this double negation, Dasein or determinate being, may be a close relative of the original operand, pure being, but is not strictly the same thing any longer.

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 will get really strange, if we now turn to double negation in a more challenging sense. Let us be clear and precise therefore, lest our friends from the camp of analytic philosophy complain that they cannot follow us. "Dear friends," we will say to them, "we do not know much about formal achievements like mathematical logic and set theory; but you are certainly experts in those fields. So you will understand much better than we do what it means to replace the set theoretic foundation axiom with a weak anti-foundation axiom, $AFA_1$, which says that there is at least one set, x, which is its own unit set: x={x}. And you will know what it means to add a strengthening clause, $AFA_2$, which says that there is at most one set, x, which is its own unit set: x={x}. You will surely know that we get a non-well-founded set theory as explored by the set theoretician Peter Aczel, a theory which is consistent, if set regular set theory is."

Forming unit sets is a monadic operation. In the case of the unit set of itself, which Peter Aczel calls Ω, the operation must have run at idle, without any original input, but nevertheless must have produced an output, viz. Ω, which then, retroactively, could be put to service as a proper input. "We would never have thought" – we will say to our friends from the camp of analytic philosophy – "that such a circular thing be possible. It reminds us a bit of a mill that grinds exclusively what it ground before. But we are willing to follow you into that circle. We only ask you to be true to your findings and apply the lesson we learned from you widely." Take any other monadic operation, therefore, and think of the analogue of Ω for that operation. Why not choose negation as our example – we were talking about negation anyway. Of course, there is an important difference: set membership is a relation between (abstract) objects, while negation is a truth-functional connection between propositions or states of affairs. Because sets and there members are objects, we have to use the equivalence relation of identity to relate the base and the result of the operation and say: "Ω = {Ω}". With states of affairs – be they propositions or urstates – we will have to use the equivalence truth function, i.e. the biconditional instead. So, consider a content, ν, which is by definition logically equivalent to its own negation: $\nu \leftrightarrow \sim(\nu)$. This content, ν, is clearly conceivable, if Ω is. But for thought contents, other than for abstract objects like sets, *esse est concipi posse*, which means that

their existence is their conceivability. So, we know without any further proof that the content ν exists, i.e. that it can be grasped in thought. What we do not yet know is whether ν obtains as a fact, whether it is true. But the answer to that question is given immediately by our bi-conditional itself: ν is true iff its negation is true, i.e. iff it is not true.

But this is an old acquaintance, which we have long since known in semantic disguise, viz. the Liar: "This sentence is not true". All of a sudden we begin to see that the truth predicate is innocuous as regards the antinomy of the Liar; it is just a technical device here to say something via semantic ascent which cannot be expressed more directly: circular negation, i.e. a thought content that is defined by being logically equivalent (and in this sense identical) to its own negation. We are here at the source of Parmenides' *horror negationis*. Any operation whatever may be considered in circularity or self-application. The result will be funny in some cases, or inexistent, or trivial, or interesting as in the case of the unit set Ω. But with negation the result is an antinomy, and one that cannot be cured. In other cases, when we hit upon an antinomian content, we just negate it. For a second it came to you that p and not p. But, no, that would be an antinomy; so you deny what you were about to endorse and say "not (p and not p)" instead. The threatening antinomy is avoided. But with the Liar, i.e. with circular negation, that saving move is impossible. If you deny it, you say what it says itself, and thus endorse it. So negation inevitably leads to an antinomy, given the universal possibility of considering any operation in self-application. That's why Parmenides wanted logical space to be off limits to negation.

In Hegel's Logic, double negation in the challenging sense of circular negation enters the scene with the parallel and reciprocal negation between *something* and the *other*, i.e. with otherness. It is negation in the specific shape of otherness that first runs at idle and goes circular, in the logical urstate of the *other itself* or the *other of itself*. At this early stage in the logical development, circular negation is still contaminated with immediate being, and it will remain contaminated with being until the very end of the logic of being. In the logic of being, circular negation behaves as if being in one of its particular shapes were negatively turned upon itself. In set theory that would correspond to the situation, where only $AFA_1$ is accepted and the possibility is left open that two sets, x and y, with $x \neq y$, are unit sets of themselves, thus $x=\{x\}$ and $y=\{y\}$ and $\{x\} \neq \{y\}$. Here, each of the two different sets would bring something other to bear on its individuation over and above its being a circular unit set. The individuation of x and y would be the result of two factors: circularity as a unit set plus something immediate.

In the logic of being there is no question of there being something immediate except being. So at every stage of the logical development we will have to reckon with only one case of circular negation. Nevertheless, immediacy is still essential for the individuation of those respective thought contents. That is what is meant by talking about a contamination of circular negation with being throughout the logic of being. In the passage to the logic of essence, this contamination is overcome. In set theory the passage from being to essence would correspond to the addition of $AFA_2$ to $AFA_1$. From now on circular negation is defined solely by its negative circularity. Nothing else, nothing immediate, is needed or allowed any longer to contribute to the individuation of the relevant thought contents.

This is good news, by the way, for all those who feel uncomfortable with the idea of something given. At the beginning of the logical project it seemed as if we in our background logic had to find some minimal thought content to be given to (and grasped by) pure thinking. With the passage from being to essence that ostensible theoretical investment of ours turns out to be theoretical profit. Being turns out to be mere *shine*, as the German word ("Schein") goes for something that may either be veridical seeming or else illusion, and shine is what comes up with empty circular negation. The appearance of immediacy is an effect of circular negation pure and simple.

Still the mediating operation itself, i.e. negation, is something we took over and adapted from 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 passage into the logic of the notion (or the concept, Begriff, *logos*) even that last remainder of an ostensible immediate investment on our part vanishes. The notion (Begriff) is by definition that operation which is identical to its base (input) and its result (output). In that way, negation as well gets defined as the activity of the *notion*. 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 internal structure of the notion (Begriff), we will gain a new and profound understanding of propositional negation. At the end of the logic of the notion, with what Hegel calls the absolute idea, this should have become totally clear. At least that is what Hegel promises.

## Concluding Remarks

I do not know if Hegel's program can be carried out successfully, but I think it might. If so, then Hegel is still playing the game of metaphysics, i.e. of theoretical science, even though

he plays it in a non-standard way. In standard metaphysics a theoretician will focus on some particular stage in the development of logical space and present that stage as the whole of logical space. A great metaphysical theory will thus be correct in the sense of *true to a chosen stage in the evolution of logical space*. Typically, a sufficiently sophisticated metaphysical theory will try to be true to more than just one stage of evolving logical space, but without noticing that it thereby tries to be true to competing stages in an evolution. Hegel, on the other hand, sees through the game of competing stages in the logical evolution and competing metaphysical theories. Nevertheless, he is still playing the game of metaphysics, i.e. of philosophy as an ostensible theoretical science. That game is a game of make-belief though, or so it seems to me. One pretends that there is a universal, eternal standpoint, a zero standpoint which allows us a god's eye view from nowhere specific. Mathematics plays this game most successfully, but mathematics is an abstract theory right from the start. Physics has associated with mathematics in modern times and has paid the price of losing important aspects, not only of the mental, but of nature as well. The phenomenal qualities arguably are out there in the world and so is the arrow of time, as witness thermodynamics, which physics cannot explain. And not only time's arrow but also the modes of time, past, present and future, are out there in the world, and physics cannot even describe, let alone explain them. Of course, modern physics has been utterly successful in uncovering layers of abstract features of physical reality in mathematical language. But the hope of some physicians and of many philosophers of science that it will in the event come up with a subvening base for everything else to supervene on, is doomed to failure. Physics is on a never-ending road to the chimaera of a final *theory of everything*. But every candidate *theory of everything* will necessarily be confronted with some anomalies and will thus fail as a candidate and give way to a successor candidate that will fail as well. Physics is alright in its own place and in its own job, but its job cannot be that of laying bare the ultimate structure of reality. Physics only lays bare ever more fundamental mathematical aspects of reality.

Now metaphysics traditionally has equalled physics in the endeavour of laying bare the ultimate – though not mathematical, but categorial – structure of reality or, in other words, it has attempted to lay down the topology of logical space. Hegel's non-standard metaphysics has been a major, in fact the decisive step forward in that respect. He has shown (if successful) that logical space does not possess a fixed, logically eternal topology, but is subject to logical evolution. Nevertheless, the fixed point of that evolution, reached in Hegel's own non-standard metaphysics is to supply us with a superior epistemic standpoint which can go proxy for the universal view from nowhere. Marx, by the way, borrowed that Hegelian idea for his con-

ception of the history of class struggle, the specific standpoint of one particular class, the proletariat, according to Marx, being at the same time the general human standpoint as such.

But that may all be wrong. It may be that we come closest to what is real not in theoretical, but in hermeneutical science. Heidegger says so in “Sein und Zeit”, and I think I found independent evidence for his position in the wake of what Peter Strawson and Gareth Evans found out about particulars in space and time and about the necessity of indexical thinking. But that would be a story for a very different occasion.