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Conceptual thinking in Hegel's *Science of logic*[1]

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ABSTRACT

Analytical philosophy after Frege's logicism and Russell's logical atomism presupposes sortal domains of individual 'entities' for which we already have defined their identities and elementary predicates. Such 'things' exist only in ideal 'possible world' which are nothing but structured sets of purely mathematical sets. In contrast to such purely abstract models, Hegel analyses the role of conceptual differentiations and corresponding default inferences in the real world. Here, all objects are spatially and temporally finite. Even if real things move according to certain forms, they are only moments in holistic processes. Moreover, the forms are no objects of immediate empirical observation but presuppose successfully reproducible actions and speech acts. As a result, no semantics of world-related reference can do without Hegel's categories, which go far beyond the means of merely relational mathematical logic.

KEYWORDS

conceptual holism, logical atomism, sortal domains, generic forms of change, dispositions, dialectics, categories, quality, quantity, measure, essence

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1. HOLISM AND ATOMISM

1.1. There is no immediate knowledge

There is no foundation of human knowledge in subjective sensations. Therefore, there is no construction of knowledge from bottom up, starting merely with individual perceptions, as animals must do. The reason is that human knowledge must be understood as a joint development of cooperative and individual techniques and faculties, including its verbalizations, rather than a merely ontogenetic development of individual skills on the ground of phylogenetic evolution. This is no claim or belief to start with. Rather, we implicitly and practically all know it as a basic truth of our mode of being in the world: We learn many things by words and we learn to understand what we perceive by the concepts that come with these words.

Georg Wilhelm Friedrich Hegel's *Phenomenology of spirit* already shows the corresponding errors in traditional empiricism with its assimilation of human knowledge to animal perception and skills. Its clearest expression until today we find in David Hume. At the same time, Hegel criticizes rationalism as it is traditionally identified with René Descartes' mystification of a self-conscious thinking self. In fact, Hegel's *Phenomenology* develops its insights into the social constitution of human intelligence, understanding, consciousness and self-consciousness by a method of deconstruction, which he calls 'dialectics'. This method is, at the same time, destructive and re-constructive. It proceeds by stepwise criticism of all too naïve or all too easy real and possible answers to the question what the human spirit is. Methodologically identical but thematically different is the procedure of Hegel's *Science of logic.* This book also deconstructs all too naïve positions. But now the topic is being, i.e. what exists and what is true. The goal of the *Logic* is, however, much the same as of the *Phenomenology*. The goal is to lay the methodological grounds for any self-conscious, i.e. self-controlled, concept of knowledge, truth, and reality. The dialectical or deconstructive analysis of these concepts proceeds, so to speak, from top down.

The rationale for starting at the top is that analysis comes before synthesis: Our reflection on the relation between our knowledge and the world, or rather, on the very concept of knowledge and the very concept of the world, begins, and must begin, from inside a whole tradition of knowledge and experience. This is an undeniable fact. And it is a methodological rule. We must acknowledge it and deal with it. I propose to refer to it as the truth of holism in any self-conscious philosophy of knowledge and science.

Today's analytical philosophy prefers, instead, to build all the things in the world and all our knowledge of them up from allegedly immediately given atoms. In doing so, analytic philosophy is not analytical. Despite all verbal attacks on 'synthetic' philosophy, as we can find it nicely represented in Bertrand

Russell's polemics, analytical philosophy believes without any further grounds and sufficient arguments in some kind of logical atomism. But logical atomism presents no analysis of the presupposed elements in language and science. It rather presents a synthetical construction of a more or less simple formal *eidolon* in the sense of Plato. Such an *eidolon* is a logical toy model, a formal picture, through which the analytical philosopher, as he calls himself, wants to understand and explain the relation between language, science, and the world. Unfortunately, there is a great danger that the corresponding *eidolon* of language and propositions on the one side, the 'world' of 'things' to which our names sentences refer on the other side, produces an *ideo-logy*. It results from the all too narrow perspective of the guiding *eidolon* or, as Wittgenstein has put it, from a one-sided diet when thinking of language, knowledge, and the world. In short, the basic problem of analytical philosophy and scientism and their hidden ideology of logical atomism lies in a lack of analysis of the 'elements' of their synthetic constructions, as Hegel himself famously has stressed.

In mathematics, we indeed begin with elements, for example with numbers and with (elementary) arithmetical propositions. But if we want to understand what it means to assume these numbers and numerical truths as given, we rather need a philosophical analysis of the conceptual constitution of them. An important issue is this: Numbers and propositions are accessible only via corresponding number-terms and sentences. And they 'exist' only in the form of our mathematical practice.

Real knowledge is much more complex than any ability to deal with the axioms and deductive rules of a formal calculus like a computing machine. This is so because of our relation to the real world. And this means that we have to understand the notion of a world, which I or you do not only talk about, but really experience. What we only can talk about, are mere possibilities or merely intelligible worlds of thought. In such worlds, we find only *Dinge an sich*. On the other way round, things in themselves, as such, are only things of thought. This is one of the most important systematic insights of Hegel, which parts him from Immanuel Kant. Of what we can say that it really exists must show itself somehow in our human experience. On the other hand, claims about real existence always involve some partly generic and, as such, situation-invariant, partly empirical and as such situation-variant form and content.

Now we can also see that, and how, real languages are different from the merely formal languages of mathematical theories. The language of science is not just mathematics, because it refers to a world of real experience. Mathematics is merely a formal backbone of mathematical physics. In short, our real practice of science and knowledge cannot be understood or made explicit if we view it only through the lens of formal theories. Rather, this way to look at it produces the ideology of scientism.

1.2. Hegelian 'categories' develop into a whole system of differentiations and inferences

Our leading question now is what it means to start, as Hegel does, with such general words or 'categories' as 'being' and 'nothing' and what it means to 'develop' or 'deduce' such words or 'categories' as 'becoming' and 'being there' and via them other 'categories' like 'quality' and 'quantity', 'measure' and 'essence'. A first answer to this question is this: These words or categories just name most general forms by which we reflect on the relation of thinking or speaking and the world. We all use them every now and then in our practice of reflecting on general forms of speech. But in this use, we are usually not aware of their meaning. And, what is worse, we tend to forget the presuppositions involved in their use. Therefore, there is some need of developing a more self-conscious use of such 'categorials'.

Hegel's enterprise is, indeed, guided by this goal. The steps he proposes to go in his analysis lead us, so to speak, 'down' from the more general to the more particular categories. The reason is this: Self-conscious analysis makes the scales of methodologically ordered presuppositions explicit. In doing so, it develops our self-conscious knowledge about the peculiarity of human knowledge. As such, it is the 'metaphysical' knowledge of Aristotle's *noesis noeseos*, which turns out to be the same enterprise as Kant's transcendental analysis, if it is correctly understood.

We therefore should by no means confuse Hegel's steps of developing categories with deductions in our modern sense. In such a deduction, we start with axioms and derive theorems according to some already accepted rules of deduction. According to Hegel's idea of a logical development, we rather proceed in showing what is already presupposed when we explicitly use, or implicitly (practically) refer to, the categories in question.

1.3 Being is truth, content is form

But how does Hegel work his way down from the most general and abstract to the more concrete and particular 'categories'? Hegel begins with the category of being. There might be many things to say what this category is. I take it that 'being' is the most general label for anything that (allegedly) exists in some sense or other. That is, it is a super-label for existence, reality, truth, objectivity and other sub-labels like this. In a sense, 'being' stands, at least at first, for the formal idea of existence of the world at large and of determined objects in the world, of states of affairs or of processes and events. In other words, Hegel does not distinguish yet between the whole world and limited realms of objects, real properties and true propositions, at least not at the beginning. Nor does he distinguish yet between the level of reference and the level of expression. Like *Parmenides*, one of his self-elected predecessors, he just names a topic or rather,

a problem by mentioning and using the word 'being'. And he proceeds by asking what we mean when we use this word. In short, for a diligent reader there should be no question that this category of being corresponds to the category of formal truth — only that in the latter case we talk about expressions of formal knowledge, not about what it is knowledge of.

The immediate problem now is that being or truth would be empty if we had no criteria for distinguishing truth from untruth, being from not being. Therefore, there is no concept of truth without negation, i.e. without making a difference to non-being and falsehood. The category of being therefore contains, in this sense, already non-being as its opposite. This means the following: Being is defined only in relation to non-being. Truth is defined only in relations to falsehood. But how should we understand the criteria or rules for these differentiations? The road of Hegel's analytical reflection leads now to further categories like becoming or change and presence or *Dasein*. This means that we have to accept the fact that any possible distinction between truth and falsehood can only be made actual in a present world of empirical changes, as *Heraclitus* has seen already. It will turn out that in this real, empirical, world not only 'things' change, but the 'meanings' of words, too. I.e. there is also a development of our systems of distinctions and inferences, expressed by our words. We therefore have to account for the fact that any actualization of meaningful speech, any speech-act, and its proper understanding, is, in one way or other, bound to the present situation of discourse, even though it also transcends the situation and perspective of the speaker, or else it could not be understood by others, who, by default, are in different situations and occupy different points of perspectives.

In other words, we can never totally undo the performative, i.e. subjective, and the dialogical, i.e. co-operative, aspects of meaningful speech, even in its written form, as *Plato*, the third in the row of Hegel's philosophical heroes, already knows. As a result, transcendence of our subjectivism (and corresponding finitudes) remains always somehow 'relative'. As a result, we have to distinguish between relevant or essential and irrelevant and inessential features of the particular situations of speaker and hearer. By doing so, we relativize generic invariance. In other words, when we 'abstract' from actual situations, as we do especially in our reflections on semantic forms, we do not arrive at absolutely invariant sentence meaning. We arrive at best at generic forms of dialogical understanding.

The resulting problem of this insight is to reconcile the very idea of situation invariant meaning and truth with the limitations of our actual use (of schemes) of conceptual differentiations, identifications and inferences. Only on the ground of such reconciliation we can understand the concept of non-subjective knowledge and science. The problem is analogous to Plato's problem of *methexis* or projection of forms unto the real word of possibly actual human

experience, as it is discussed in the dialogue *Parmenides*, which was praised by Hegel emphatically as the first 'speculative', i.e. highest-level, reflection on meaning and truth. The main and leading question now is: How do actual things share properties with generic forms?

2. FORMAL AND REAL BEING

2.1. Being in itself is formal being as such

There is a traditional distinction between being in itself and being for itself. Being in itself or as such (*an sich*, *kath'auto*) is, as Hegel was the first to notice, merely abstract existence, produced by our ways of talking and thinking. Everything which exists only *an sich* does not really exist yet. For example, Sherlock Holmes exists as such, or Zeus or the archangel Michael, just as the number 7 or the strings of string theory. Of some of these things we know that they do not exist actually. But of other things, for example, of the zoo of subatomic particles in modern particle physics, we do know that they somehow really exist even though we sometimes do not understand the precise way in which they do. Therefore, it is much easier to know what these particles are *an sich*, in themselves, than to know what they really are, *an und für sich*, i.e. 'in-and-for-themselves'. We know what they are as such because books tell us. What things are *an sich* is not at all unknown. It is by no means forever hidden behind the veil of our subjectivism, as Kant has made us believe. It is, rather, the best known part of them. This is, as I already have said, one of Hegel's basic insights. It denies much more radically than Kant any reference to a world totally behind the scene of experience. Such transcendent reference is logically impossible. It is not well defined. Whoever thinks otherwise mistakes the mere claim of transcendent reference for an accomplished reference.[2] But when we nevertheless sometimes talk about things in themselves, we focus, in fact, on conceptual form and abstract reference.

If we say, for example, that numbers in themselves (or as such) cannot be perceived, we comment on the fact that it is no essential feature of the numbers as such that we can see or hear or touch number-terms, even though we need some such representations. A blind person can do arithmetic or geometry on the ground of acoustical or 'haptical' perception (of touching things), a deaf person certainly needs additional help of 'optical' signs. Numbers as such do exist as forms, but only as forms. As forms they are grounded in a practice in

[2] A whole tradition of classical analytical philosophy does not see that Hegel is even more radical in this critical insight than logical empiricism. The latter shows a highly ambivalent attitude to dogmatic physicalism. In fact, the refutation of Kant's tinkering with *noumena* or things in themselves had been one of Hegel's core concerns.

which we make use of a whole system of possible representations of numbers for example by number terms in orderings of sequences of things and in counting sets of things. When we talk about numbers as such, we talk about (sub)forms of a whole practice of calculation and therefore also about forms of possible (speech) acts.

The example of numbers shows that what philosophers have addressed since the times of Plato by using phrases like '(being) in itself' are in fact subforms of a complex form. Being for itself or *Fürsichsein* refers, in contrast, to a set of possible actualizations by individual tokens.

2.2. Being for itself refers to identifications in empirical appearances

Hegel uses the distinction between being as such and being for itself in order to articulate the corresponding double aspect of any act of referring to concrete objects in the real world, namely the generic and abstract type or form of the object, and the actual token by which it is actually represented. The phrase '(being) in itself' or '(being) as such' or *An-sich-Sein* is used in cases in which we refer to a merely possible thing or rather to a merely 'intelligible' object of thinking. Such reference always comes in an abstract and situation-independent, generic way. When we are asked to focus in our reflection on this aspect, we are asked to think about the thing as such or *an sich*.[3] We all know from some practice that, and how, we talk about the lion as such, about art in itself or the German *an sich*, and what we mean when we say that something fulfils a condition only *an sich*, but not really. The phrase '(being) for itself' or *Für-sich-Sein* is, however, used when Hegel wants us to focus on the individuality of the case he refers to anaphorically in a present situation of discourse. In such a case, the identity of the thing we refer to always appears as a relation between different possible presentations of it. Notice that the Latin expression *pro se esse* indeed means 'to stand in a relation to itself'. In a sense, the identity of any thing always comes together with an equivalence-relation between different 'appearances', 'presentations' and (symbolic) 'representations' of the thing; and there is no way of talking about any such identity or equivalence outside our practice of identifying and differentiating things.

Now we see why being for itself is a fairly difficult 'category'. It is the category in which we seem to talk about an object as if our conceptual grasp of it were not relevant for what it is for itself. But the thing we refer to is always already

[3] Hegel makes it clear that he refers to Parmenides, Heraclitus and Plato. Nevertheless, it is usually underestimated how important his authentic reading of these authors and of Aristotle is for Hegel's ideas in his science of logic, down to the appropriate use of the term 'as such' or 'in itself' as the translation of the Greek *kath'auto*.

a kind of amalgam of its generically and conceptually determined being-in-itself and our judgments about 'its' actualizations or actual presentations and representations, by which we identify the concrete thing *an und für sich*. By the way, in a sense we cannot talk about numbers as objects 'for themselves'. This is so because numbers are no individual objects of experience, but only general objects of thought. On the other hand, it is perfectly fine to talk about the *Fürsichsein* of individual *representations* of numbers. This refers to the practical identification of sign-types, i.e. to the practice of 'reading' a token as a token of a type, or, what amounts to the same, to the distinction between ciphers and number terms like '1' and '2' or '11' and '12'.

2.3. Being in and for itself is the concrete thing

Any sufficiently invariant object of concrete understanding exists in-and-for-itself. This means that it is already understood as an actualization of a determinate generic form. In fact, Hegel interprets Plato's idea (in itself) as such a generic form. The Latin word *con-crescere* means 'to grow together', 'to amalgamate'. In any reference to a concrete object, a generic form and its actual embodiment are already, in this sense, 'grown together'. Since it is presupposed that the object is an actualization of this... (and not that...) form or Hegelian idea, a certain pre-knowledge about the Platonic idea is presupposed. We see now that there is a task to explicate the relevant Platonic or Hegelian idea or generic form of something, which usually is presupposed implicitly. This is the task of (transcendental) philosophical analysis, properly understood.

Explicit judgments about relevance bring, so to speak, ideal propositions about ideal forms self-consciously back to the real world. We know this case best from applying the propositions of mathematical geometry to the real world of measured distances and angles. As we can see now, too, knowledge about (ideal) forms (as such) plays an important role in any articulated empirical knowledge, in which objective claims of truths are articulated. Such knowledge about generic forms as such can be learnt by heart or even represented as mathematical, i.e. merely schematically learnable pre-knowledge of what we empirically can perceive. As such, the knowledge about generic form plays a certain *a priori* role in any concrete (hence empirical) knowledge. Knowledge about generic forms is, on the other hand, in the explained sense an a priori presupposition of explicitly articulated empirical knowledge. Knowledge about generic forms is conceptual knowledge. As such, it goes far beyond the so called 'analytical' truths of mere definitional conventions like "a bachelor is a man who never was married" or the like.

Plato was the first to notice the important conceptual fact that eidetic or generic truths, for example about lions or atoms or about chemical substances, are the real goal of any proper science, which, as such does not list huge amounts of

singular facts, but develops our concepts. In fact, these eidetic truths play the role of presupposed conceptual knowledge when we use the corresponding words in empirical statements about singular cases and say, for example that the lion Jonathan is sick or that a particular chemical reaction took place here and now. Any concrete empirical reference to an object in the world presupposes some such generical knowledge about forms, at least implicitly. Animals have empirical cognition. But they do not take part in our practice of objective knowledge, which is presupposed in any empirical reference to the world. Any such reference presupposes a whole system of implicit judgments or rather implicit competence of proper action, for example when it comes to recognize that a certain speech act is an actualization of a certain form or that a certain appearance is the appearance of a certain object.

Judgments are free actions. They do no occur to us. And they can be, like other actions, too, right or wrong. For judgments, as for actions, there is already a normative horizon defined. What is valid or allowed to say or claim, what we must give reason for and what it is to give such reasons is defined in this horizon. There is no content, hence no judgment, if, what someone says is not already understood in the horizon of normativity, defined by what counts as conceptually 'true' or 'generically reliable' forms of material inferences. The norms tell us what we, the hearer, may or should (not) believe, expect, or do, after the speaker has (presumably sincerely and with good reason) said X or did Y.

The age-old question of semantics since the time of Plato's theory of forms is, obviously, this: How do we 'understand', and learn to understand, generic meanings of words — starting from individual and particular cases of their use? Hegel's answer runs like this: Understanding is taking part in a whole culture, a whole system of joint, cooperatively formed, practices. The substantial form of the practice, its idea, is what is understood. Its essence remains identical in all possible and different ways of representing the form or Hegelian idea. Hence, we better distinguish between the relevant inner form (or content) and the irrelevant outer form, by which the content is represented in particular cases. The term 'concept' stands for (systems of) inner forms or contents.

Comprehending contents or concepts consists in making appropriate distinctions and inferences in speech acts and non-verbal actions. It is a certain competence of acting properly, according to the defining norms of the practice in question. This is indeed a main result of Hegel's development of an argument in his *Science of logic*: There is no other understanding of truth and meaning possible, at least if we do not allow for mystifying and dogmatic answers.[4]

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[4] It should be clear to the reader that the general form in which I express this 'semantics of distinctions and inferences' implicitly refers to Robert Brandom's idea of a normative and inferential constitution of forms of actions and meaning. Cf. especially BRANDOM 1994 and BRANDOM 2000. The main difference is that I read Hegel's logic as a transcendental analysis of presupposed forms in human practice. I do not believe that any genetical explanation

3. LOGIC OF BEING

3.1. Objective logic analyses what normal speakers take for granted

Hegel's presuppositional analysis of the system of categories and the corresponding domains of objects of reflection and speech includes an analysis of truth conditions. For modern readers, this is not easily seen. The first point to mention is this: When we explicitly reflect on propositions and states of affairs, they are always already addressed as objects of reflection. But in their actual use, propositions are active performances, namely utterances of sentences. And 'existing' states of affairs are given in actual experiences, not as objects of thought. It is a very deep insight, which goes back to Johann Gottlieb Fichte, that there is a kind of 'ontological difference' (Martin Heidegger) between the mode of being of performances and actualized facts on one side, the objects of reflective or scientific thought on the other. For being an object of thought, some generic topicalization is presupposed. The logical difference is made perspicuous by Gottlob Frege. Frege's *Begriffsschrift* makes the differences explicit between the performation-sign and the copula (resp. functional application) and, what is even more important, between a predicate in its use and a property as an intensional object of reflection, and a set as an extensional object of talk. Ludwig Wittgenstein, not Bertrand Russell or Rudolf Carnap, sees the importance of these distinctions and develops them in his critical philosophical analysis. He admonishes us, for example, to replace any mystifying talk about abstract meanings by talking about forms of use, practice and life. Hegel's way of listing a row of categories like presence, quality, quantity, identity and so on, is no less general and abstract. But the intention is clear. The task is to transform their presuppositions into an analysis of propositional attitudes and speech acts like claims, beliefs, intentions or promises.

In the following, I want to give an outline of the major connections between Hegel's doctrine of being, doctrine of essence and doctrine of concept. The leading question is how forms relate to real experience. I begin with a short explanation of central place of measurement as a paradigm for the need of a projective 'mediation' of abstract forms and empirical contents. Then I turn to the question how to determine the quantificational form of a noun phrase used in a proposition and how the problem of substance leads Hegel to a special doctrine of essence. Its topics are the dialogical form of individual judgments about the 'real' reference of words and the dialectical or historical form of objectivity and rea-

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of how norms and forms may have developed is more than a post hoc story to soothe some anxieties of monistic naturalists. There are other ways to get rid of an allegedly transcendent dualism of forms as such and their concrete actualizations.

son. Finally I try to make sense of Hegel's difficult claims about different forms of 'judgment' (*Urteil*) and 'inference' (*Schluss*) in his doctrine of concept.

3.2. Measurement is a projection of forms

The core idea of Hegel's procedure in his logic can be seen in the third part of his doctrine of being, which deals with the category of measure. Hegel shows why we need an analysis of how we project abstract forms of speech onto experience by some sort of measurement. This is clear for any merely formal talk about geometrical forms and pure numbers or proportions. Purely mathematical propositions do not refer as such to the actual world of possible experience. They do not refer to a transcendent world behind the scene of phenomena either. They are part of a calculus, a formal form of using signs and language. They refer to the world of experience only via appropriate projections. Hegel calls these projection, *parte pro toto*, 'measures'. When we use sentences about geometrical forms in a talk about empirical objects, we need a 'measure' in order to judge if concrete figures or gestalts represent the forms well enough. When we use arithmetics in calculations we have to identify the relevant units and sets. Such a unit is also determined by a 'measure' in Hegel's most general sense. The measure determines what is counted. In fact, measures in Hegel's very general sense are the criteria that connect abstract quantitative forms of language as we use them in pure arithmetics and geometry with qualitative distinctions.

3.3. Quantity presupposes quantitative identity

In order to understand the general problem of reference we now must go back to the chapter B in the doctrine of being and the category of quantity. This category refers to the quantificational forms in which noun phrases are used as subjects in predication. The background problem is this. It is often not the expression as such that tells us if it is used as a singular term or as a quantified expression. Expressions like 'some lions' or 'many lions' are only used as quantifiers, but proper names are only usually, not always, used as singular terms. In a sentence like "the lion hunts mammals", the noun phrase 'the lion' can name a singular object. But it can as well refer to the species of lions. Or it refers to all lions. In the first case, the sentence says that a certain singular lion, in the last case that every lion chases mammals (even though not always). In the generic case it says something like this: it is a feature of the species that lions hunt mammals. But sometimes, for example in zoos, lions survive just by eating carcasses. This leads us to the following general observation. In sentences of the following logical form:

(*) N has the property P

or

(**) $N \varepsilon P$,

P replaces a simple or complex (one-place) predicate. It is not too difficult to bring sentences somehow under the form (*) or (**).[5] By doing so, we put some particular focus on the topicalized subject *N*. We usually think that in (elementary) predication *N* replaces a singular term. But for Hegel, like for Kant, the subject or noun phrase *N* in focus can have different quantificational forms. Naming something singular in a proposition is only one of the possible quantificational forms of a noun phrase. Therefore we better say that any noun phrase *N* as a subject of a predicative sentence of this form is a generalized quantifier — fairly much in the way Richard Montague and his followers use the term. This means, in a sense, that the classical or traditional understanding of the logical form of predication

N ε *P*

is *not yet* the Fregean 'functional' form of 'elementary' predication

P(*N*).

As a form it is rather still very near to a form of surface grammar. Using the idea of Richard Montague we might say in a first approach that it corresponds to a form like

N(*P*).

That is, the subject or noun phrase is a functor that takes the verb phrase as an 'argument'. If *N* corresponds to a singular term t_N, and if the predication can be analyzed as a function according to Frege's proposal, then *N*(*P*) says essentially the same as $P(t_N)$.

If we look at noun phrases *N* as subjects in sentences or propositions of the form *N* ε *P* in this traditional, surface related, and at the same time cautious way, we can see that we usually first have to figure out the quantificational form of *N* by looking at both expressions, *N* and *P*. The intended 'unity' expressed by the copula 'is' in '*N* is *P*', must be found out. According to Hegel, we do this by an 'inference' (German *Schluss*) that shows how the noun phrase *N* 'coincides with' or 'fits to' the verb phrase *P*. In other words, we first have to figure out the form of this coincidence, before we can say that we have understood the proposition and before we can make a (reflective) judgment about the truth (value) of the expressed proposition. Hegel's idea seems to be that a 'medium term' or 'medium proposition' makes this unity explicit. It is a conceptual or generic unity. As such

[5] We can formally even demand for any sentence that it has the N ε P form and say that the weather is rainy or that there is an event having the property X — where X might be the property that it is my walking home or the sounding of your trumpet. But if we do so, we presuppose that the realms of objects or entities referred to by the variables (like weathers or states of bodies or events) are already defined. This means in turn that the corresponding categories of quantity for the corresponding variables are already presupposed. We want to know what this involves.

it is not just a subjective way of dealing with *N* as if it were *P* or a mere attribution of the expression of *P* to the subject term *N*.[6]

We have seen that Hegel distinguishes between different quantificational status of *N*: the status of universality (*Allgemeinheit*), the status of genericity or particularity (*Besonderheit*) and the status or singularity (*Einzelheit*). Universality refers to all-quantification, singularity to singular terms and singular objects. Generical judgments form a 'medium realm' of terms and sentences. They talk about a member of a species 'in itself', in the formal or generical mode of *Ansichsein*. As such they determine the realm we talk about formally. They are presupposed in any definition of a realm for universal quantification. By a certain use of generic judgments we determine what it means to be a singular object in a set of objects. The example of talking about persons can show what is meant. It depends on the predicate, if dead persons or futures do count or not. Often they do not count, for example when we talk about the number of persons in a state. The form of being a living person determines then the relevant concept of a singular object or subject in the set of objects or subjects we talk about. It determines how to read a universal statement about a whole set of persons.

Indeed, statements of the mode 'particularity' or 'genericity' have a 'mediating' function when we have to determine the meaning of a noun phrase like 'the lion' in its universal or singular use.[7] In order to see this we look at a well known and widely discussed example from geometry. A sentence like the following has two or three or more readings: "The circle has exactly one centre". As a generic sentence it says something about the form of a circle. As a universal sentence it says something about all circles — as forms or as figures. As a sentence about a particular object it may say that this circle that you have drawn or you want to refer to has a centre — like all other circles. Many people seem to have similar problems in understanding the generic use of the sentence in claims about the ideal form of a circle as Protagoras and Sextus Empiricus and Hume obviously seem to have had. They all claim that there are no such forms. Any 'real' circle has indeed properties that contradict the list of ideal properties a mathematical circle is said to have. Nevertheless, Plato is right to claim that the ideal form determines the very meaning of any application of the word 'circle' in the realm of appearance in a kind of a priori way. We can put this insight into a more general form and say that generic statements determine the conceptual content of actual empirical claims. But we may admit that they do this in a way which remains 'subjective' in a certain sense. The reason is that generic statements, though a priori in function with respect to singular empirical statements, still depend on a whole system of material knowledge and therefore can be subject

[6] Cf. Enc. § 179: "all things are a genus" and § 180: "the concept is the unity of subject and predicate, expressed by the empty 'is'".

[7] Hegel's *Besonderheit* does not just refer to Aristotelian middle term in syllogisms as we shall see.

to change. In a sense, generical statements replace the so called synthetic a priori statements in Kant's framework.[8]

In any particular case we have to determine the 'quantity' of the noun phrase or subject *N* in the sentence in question. This includes a determination of the realm and of the relevant units (elements, objects) we (want to) talk about. We understand the logical status of *N* as a subject in a proposition only if we can relate it properly to a whole realm *G* of discourse and to the corresponding realm of objects *g*. This means, firstly, that a name has its determined meaning only in the context of a sentence or rather in the proposition expressed by the sentence. It means, secondly, that it has its determined meaning and reference only in relation to a whole realm of discourse. If we put this into a negative form, it means that names or singular terms do not name anything as such, but only in a holistic framework. Their use as names presupposes the formation of a whole realm *G* as an already established realm of discourse. The units or objects of *G* can be singular empirical objects. They can be whole classes of objects or abstract objects or generic types or general species. In any case we have to know what to distinguish and what to identify.

The determination of the relevant realm of discourse is mediated by a system of generic conceptual statements. These statements articulate at the same time conceptual preconditions for understanding the sentence or proposition in question and they articulate material inferences that we are entitled to use by the proposition such understood.[9] When Hegel says that any identity already contains some difference, he expresses the fact that identities are always relative to the relevant realm of discourse, more precisely, to the relevant predicates or distinctions that define the realm together with the concept of an 'object' in the realm. Objects of a realm are identified by not making 'finer' differences or, rather, by not counting certain differences, though possible, as relevant differences. This shows why a further reflection on the very concept of identity will lead us into the direction of a 'dialectical' logic of essence and relevance.

The 'results' in Hegel's doctrine of being are mainly negative: There is no absolute universe of discourse that comes with 'immediate' or 'eternal' identities. Rather, any objective reference to a world or realm of experience or to a world or realm of abstract entities presupposes a conceptual or logical constitution of the relevant objects of speech or thinking. It presupposes a determination

[8] The doctrine of essence is a subjective doctrine of claims about generic statements by which we want to articulate the difference between mere appearances (as things for themselves) and what we say that the things essentially are (in themselves). The doctrine of concept is a doctrine of the form of mediation in our talk about things 'in and for themselves'.

[9] In § 166, *Zusätze*, Hegel compares the status of a generic statement with the normality in which the germ of a plant develops into the full plant: of course, this does not happen always.

of what counts as a possible name-like expression or a possible act of (deictical or anaphorical) naming. Since things change, it presupposes what it means to name the same or to name a different object in the realm, for example if there are different speakers with different 'perspectives'. It also presupposes that we know what counts as relevant object-related predicates or 'negations' and what counts as a negation of negation in the realm. Such a negation of negation 'defines' an appropriate equivalence relation between different ways the objects of the realm of discourse can be given to me and to you, now and then, here and there. Or rather, the strange expression 'negation of negation' tries to express the following logical fact: No predicate (i.e. 'negation') in the realm of discourse may be finer than the equivalence relation that defines the identity of the objects we want to talk about or to refer to.

4. REMARKS ON THE LOGIC OF ESSENCE AND CONCEPT

4.1. Subjective logic investigates the performative form of speech acts

Hegel calls the doctrine of essence and the doctrine of concept 'subjective logic'. The reason is this: He takes the fact seriously that any actual speech act has a speaker. Hence, we find here, for the first time in the history of logic, the deep insight that there is no free-floating situation-invariant meaning. Moreover, we cannot attach such a meaning to sentences as syntactic figures that can be used at will. Rather, the use of the sentences is floating.

This claim is directed against a basic prejudice in a logicist or rationalistic tradition that leads from Gottfried Wilhelm Leibniz to Rudolf Carnap. If we want to understand the real constitution of meaning and truth, real content and actual knowledge, we cannot abstract from the fact that meaning requires speech acts. The view from nowhere on pure sentence-meaning as we define it in pure mathematics by merely verbal or figuratives schemes of inferential operations is not good enough for expressing any relation to the real world of things and other persons. Plato addresses this problem already in his dialogue *Parmenides* (but in the *Kratylus*, *Phaedrus*, *Theaetetus* and *Sophist*, too). It is the problem of any formal semantic, not only of Plato's early theory of forms: A 'world' of purely formal or mathematical objects and truths is still without sense in Kant's sense of the word 'sense'. I.e. it does not have the proper relation to the real world of actual and possible experience yet.

But a merely subjective approach with respect to perception and dispositional attitude does not help, as the problems of empiricism show. John Locke, for example, takes an objective stance when he makes his claims about the subjective form of human understanding. He wants to ground it on the foundation

of sense-perception and on a set of mental operations. But such a claim about how human understanding allegedly works is in itself dogmatic. Locke forgets to reflect on the epistemological status of his own speech acts. It is much less clear what it means to say that the picture he draws is true than his modern followers in the cognitive sciences seem to believe. Hume, on the other hand, only seems to be skeptical in this respect. He also claims to know something about real truth and about the development of actual beliefs. He claims to know something about the leading role of desires in human behavior and that this behavior is 'essentially' of the same form as we can see it in animal behavior. The question is on what grounds we should believe such a claim, especially because it is not an empirical claim at all but a normative one. It says that an obviously important distinction between animal cognition and human knowledge allegedly is not 'essential'. But this is in itself a value statement. For it is just plain nonsense to claim that such a distinction does not have to be made or cannot be made.

In comparison to Socratic skepticism, i.e. to a reflection on the status of one own's speech acts (including those of skeptical doubts), Hume is not skeptical enough. That means, he forgets to focus on the presuppositions of his own doubts and claims, even when he seems to give only 'pragmatical' answers with respect to what is reasonable to say or to believe. This shows in a stenographic form why philosophical reflection cannot begin with an empiricist, Humean, version of so-called Cartesian skepticism.

When we remember that Hegel had called the first part of his logic, the *Doctrine of being*, 'objective' logic, we now can see a deep irony or ambivalence in this title. The reason is that this d o c t r i n e o f b e i n g never leaves the realm of absolutely abstract forms of speech and thinking. The core topic is pure mathematics. The last chapter on measurement shows that we have to leave this realm of purely formal discourse when we want to talk about the real world. Measurement is the prototype for a projection of abstract forms onto real experience. But this experience is not immediate sense-perception. It is already a joint practice of developing and controlling inter-subjective knowledge. The dialogical and dialectical, i.e. social and historical, form of this development is the topic of Hegel's d o c t r i n e o f e s s e n c e.

The d o c t r i n e o f c o n c e p t is a most difficult doctrine. It reflects on what we address when we talk about 'eternal' knowledge, 'infinite' truth and 'objective' concepts or meanings. The answer is that we address t h e human form of life as a frame for any particular forms of life. It is whole life, in which particular developments of human practices take place. In the doctrine of concept, the topic is the most general form of conceptual thinking and content. It is a 'speculative' i.e. highest-level, analysis of the very idea of conceptual understanding and the very form of human knowledge.

4.2. Essence is a result of good judgments about relevance

We need an analysis of the form we use when we project our logical forms of speech onto the real world of experience. The question is this: How do we identify empirical objects and properties in real *Anschauung*? The objects must be 'substances' that allow not only for some change of their properties in the course of events, but also for different perspectives on the substances themselves in relation to different observers and speakers. This shows why a merely abstract analysis of substantive matter, as we find it in Spinoza, does not suffice. The distinction between being in itself (*Ansichsein*) and being for itself (*Fürsichsein*), i.e. the distinction between a mere abstract form or type (of speech) and an individual token, given, for example, by deictical reference, becomes crucial here: Any sufficiently invariant object of concrete understanding is already of the category *An-und-Für-Sich-Sein*, of being in-and-for-itself. Hegel sees that neither rationalism nor empiricism has provided a satisfactory analysis for this. Kant has achieved much on this way, but Hegel is not satisfied with the form Kant presents his ideas, namely just by presupposing the model of Newton's mechanics and projecting it onto our 'normal' talk about things.

At the end of the chapter on measure, Hegel argues *ex negativo* in order to show why a new approach in a doctrine of essence is needed. A basic problem is how to determine 'substantive things', about which we can talk in an 'objective' way. Hegel criticizes Spinoza for his all too abstract answer:

> The difference (of the substances PSW) is [...] not understood in its qualitative aspect, substance is not determined as that which distinguishes itself, i.e. not as (the) subject (of a proposition PSW).[10]

A substance is an object of reference of a possible singular term in a predicative proposition. If we use such a naming term we presuppose that it is possible to judge about identity and difference of the object and all the objects in the whole realm or system referred to, namely on the ground of qualitative judgments. Hegel's term for substantial thing-identity is, as we know already, 'attraction', for thing-difference it is 'repulsion'. The word 'attraction' refers to a sufficiently stable identity, the word 'repulsion' refers to a sufficiently stable relation of inequality[11] that defines the elements of a set of objects.

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[10] GW 21, p. 381: "Der Unterschied (der Substanzen) ist [...] nicht qualitativ aufgefasst, die Substanz nicht als das sich selbst unterscheidende, nicht als Subjekt bestimmt".

[11] The word "repulsion" and the word "attraction" refer in its general use not to physical forces, but to the inequality and equality of objects as two sides of one categorical form of being an element or an object in a set of objects. Any real reference to an object in experience must fulfill the corresponding form. Cf. GW 21, p. 166 ff.

The word 'essence' is a title for the category by which we answer the question "what was it really that you or she or they were talking about"? The essence is, therefore, the *to ti en einai* of Aristotle, the that-what-it-was-to- be. If we ask, for example, what the 'real reference' of a term *N* is, and when we try to answer the question, we use this logical form. The same holds if I ask if a claim p really is true and start to answer the question. The major point is that in any such answer we have to take the different perspectives of the speaker(s) and hearer(s) into account. On the other hand, any answer I give still is my answer. I remain the speaker. All objectivity claims are objectivity claims of individual speakers. Any understanding is, first and foremost, subjective understanding. Any judgment about some good or bad, a real or reasonable understanding of a term or a text is a judgment of a subject, e.g. my judgment. There is no free floating sentence or proposition that could be true totally independent of a possible speaker. There is no view from nowhere. Truth is always a subjective matter, even when I claim to know its objectivity. In a sense, we may say properly that it is an inter-subjective matter. Hegel analyses this subjective form of truth in his doctrine of essence which he therefore calls, with the best reason of the world, 'subjective logic'. The following sentence leads from a doctrine of being to a doctrine of essence: "The absolute indifference is the last determination of being before it turns into essence."[12]

The idea seems to be this. As long as we do not understand that the difference of substances must be a qualitative difference with respect to a possible observer in actual or possible *Anschauung,* no particular determination of a substantive thing is available whatsoever.[13] As a result, the concept of a substance becomes totally empty. If we would say "pure quantity is indifference in the sense that it is open to any determination",[14] we would refer only to the form of being a substance or rather to the form of our use of a singular term in a noun phrase. If all determination of the object referred to would be still open, the subject of the sentence or proposition would be no more than a pure variable. But if we attach properties only to variables, we do not make judgments.

Some philosophers may want to follow Hume and try to understand objects or things as bundles of qualities or properties. But free-floating qualities do not exist. And properties should at least in the end be properties of objects. As such, they should not be confused with pure qualitative distinctions in the realm of sensations. Qualities of sensations are no good foundations for a logical *Aufbau* of an objective world. To show this had been the topic of Hegel's *Phenomenol-*

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[12] GW 21, p. 381: *Die absolute Indifferenz ist die letzte Bestimmung des Seins, ehe dieses zum Wesen wird.*

[13] But the assumption leads to nothing. As long as *noch keine Art von Bestimmtheit sein soll* (GW 21, p. 373), we do not know what we refer to.

[14] *Die reine Quantität ist die Indifferenz als aller Bestimmungen fähig* (GW 21, p. 381).

ogy of spirit. The concept of essence has therefore to be developed in a way that we can overcome the wrong idea that a substance could be determined immediately.

When we ask for the essence of something we ask for relevant presuppositions. The same holds when we ask for the real reference of a name and the real truth of a proposition. Any answer to such question is subjective: I say emphatically what we should and can count as essential and real. The same holds for answers to questions concerning a reasonable comprehension of the meaning of words, the reference of singular terms or the properties of predicates in their relations to the objects named. This opens the floor for the questions what we can know and how I can talk for us. The doctrine of essence is an analysis of the constitution of joint reference on the basis of individual judgments. Its main task is to analyze presupposed transformations of my perspective to yours or hers or theirs. In these cases we indeed often use emphatic expressions like 'really', 'objectively' or 'reasonably'. It is a complicated question how the mere emphatic and parochial sense or 'really' as an 'advertisement' of my judgment turns into a more urban sense of an appeal to a kind of 'we-reason'.[15]

Narrowly related to this problem is the question what it means to say that some knowledge is 'better' than another is or that a certain knowledge claim is superficial. Standard examples are cases when I know that a stick in the water only looks bended, but you, perhaps, do not know it; or when you, standing in front of a barn façade, think it is a barn, but I know from my perspective that it is not — or at least that you cannot know it. In such cases I (or we) say that my (or our) 'new' judgments determine what there really is, whereas your 'old' judgment was wrong, an error. When we talk that way, we distinguish being from seeming, reality and objectivity from mere appearance.

But any such 'new' and 'revisionist' judgment presupposes at least something about the old judgment, as Hegel notices. It is a relative judgment by its very logical form. On the other hand, the new explanations or the new knowledge often changes only some moments or aspects in the old picture: The stick is not bended, but it is true that it appears to be bended. The façade looks like a barn-façade, but there is no real barn behind (or there is, but 'only by chance'). As we can see here, revisions of old judgments are similar to revision of reference from my perspective with respect to other perspectives. Hume and Protagoras think that they talk about geometrical forms, but in reality they talk about mere figures or gestalts. A physicist may think that he talks about local and infinitesimal impulses as peculiar dynamical forces, but in reality he only talks about moments in our ways of describing generic movements in a mathematical framework.

[15] We all know that only in very exceptional cases a singular person can be right in his judgments against the overwhelming consent of almost all others — like Hegel seems to me in some aspects, despite the deep problems of making himself understood.

We might take the difference between Isaack Newton's Mechanics and Albert Einstein's Relativity Theory as an example. The new theory changes many things. But it also leaves many things unchanged. Indeed, no successful real explanation of classical mechanics is changed. The reason is this. The external applications of Newton's mechanics is much less fine-grained than people usually think. The new theory also needs external judgments and a distinction between relevant approximations and irrelevant, all too fine, differentiations that surpass the realm of relevant margins of error of the method of measurement used.

More general, the 'new' explanations or corrections are reasonable only if they solve problems for which a new solution is necessary, needed, '*not-wendig*'. This is a conceptual principle that defines the concept of a reasonable development of any science and knowledge, of any practice and institution. If we do not care for the principle we already have left the idea and project of science and the idea of reason. If 'revolutions' in the sciences and in human institutions at large should be reasonable we should understand why they are necessary, i.e. what needs are fulfilled and what problems are solved. If there is no answer to this question, the development is no progress and should not be judged as reasonable. Not every change in language, theory or method inside or outside of science can count as a progress. Notice that if a development is necessary in this sense this does not mean that things could not have developed otherwise.

4.3. Judgment and inference are always situated in a system of concepts

Another difficult part of Hegel's logic is his teaching about judgment and inference in his doctrine of concept. It seems at first as if Hegel thinks of classical syllogisms when he talks about three figures of syllogistic reasoning. The following considerations try to show that his understanding of inference is fairly different from any usual reading of Aristotelian logics of syllogistic deduction. My claim is that Hegel is not so much concerned with deductive logic, but with the form of generic predication '*N* is *P*'.

Aristotle distinguishes three figures of syllogisms according to the following scheme. For him, the basic syllogism is of the following form:

(*) If *A* contains *B* and *B* contains *C*, then *A* contains *C* — i.e. if all *B* are *A* and all *C* are *B* then all *C* are *A*.

It is the syllogistic mode called 'Barbara'. This is a syllogism of the first figure. In it, the middle term *B* is in one premise the subject, in the other it is the predicate. An example for a syllogism of the second figure according to Aristotle would be :

(**) If *A* contains *B* and *C* contains *B*, then some *A* are *C* (and some *C* are *A*).

In a syllogism of the second figure, the middle term *B* is, as we would say, the subject of the sentence in both premises. The third figure, in which the

middle term is in both premises the predicate, does not contain a valid inference in the standard form of all-quantification. If *A* is *B* and *C* is *B* then *A* may be contingently *C*. But this does not follow with necessity. In the third figure, we arrive at a valid inference only if we make use of a negated copula, as Aristotle indeed does. If, for example, some *A* are not *B* and all *C* are *B* then some *A* are not *C*. Aristotle presupposes that *A*, *B*, *C* refer to non-empty sets and he uses four different copula, as his mediaeval readers have realized, namely *AaB*, *AiB*, *AoB*, *AeB*. These forms read respectively: all *B* are *A*, some *B* are *A*, some *B* are not *A*, all *B* are not *A*. Notice, by the way, that the order of predication is reversed if we think of the normal order of 'is' from left to right. Aristotelian syllogisms are valid deductive rules in terminological trees and Euler-diagrams. As I have shown elsewhere (STEKELER-WEITHOFER 1986, part 1), Aristotle presents a complete and consistent set of inference rules with respect to his intended semantics of extensional relations between non-empty one-place predicates. As we see, for Aristotle, the letters *A*, *B*, *C* do not refer to different categories.

Hegel does not think of his 'syllogisms' in an Aristotelian or deductive way at all. His distinction of three 'syllogistic' figures does not have much more in common with the figures of Aristotle than the name. At least the resulting ambiguities are rightly criticized by Trendelenburg and others. But let us look at Hegel's three figures of 'inference', for which he uses the following symbols: *S–P–U*, *U–S–P*, and *P–U–S*. These figures of inference are defined by the quantificational status of the 'mediating term' and not, as in Aristotle, by the syntactic form of the two premises. *S* stands for 'singular', *P* for 'particular' and *U* for 'universal'. At first glance, there seem to be at least some similarities to Aristotle's procedure. In the first figure *S–P–U*, the medium term, which is a predicate in the first premise, turns into a subject in the second. The inference form 'Barbara' seems to be of this first figure:

(*S–P–U*): If (all) *S* is *P* and (all) *P* is *U* then (all) *S* is *U*.

But I think that the form (*S–P–U*) of 'qualitative' syllogisms in Hegel's approach contains *all* valid syllogistic inferences. The form represent all formal inferences of 'understanding' i.e. all valid schemes of logical deductions. Hegel calls these qualitative inferences also "inferences of presence" (or rather: of existence or *Dasein*) (Enc. §183). He notices that in such inferences the premises already contain the conclusions, so that the main problem is where we get the premises from. I.e. how do we prove a quantified statement of the form (all) *N* is *P*?

One way to arrive at such a quantified statement is the inference of induction. Hegel says that *P–S–U* is the figure of such a syllogism of induction — which would be a fourth figure, if the order of *P–S–U* and *U–S–P* would matter. It does not.[16] The inference of induction has the following form:

[16] Induction is a syllogism of reflection (Enc. § 190): Here, the middle terms have the status of singularity, they name singular things.

(*P–S–U*): If any singular case *N* of a species *P* has a property *U*, then all cases falling under *P* have the property *U*. This is just the inductive introduction rule for all-quantification.

Another way to arrive at general statements is the inference of analogy. This is an inference in which we use individual examples in order to show generic properties in a synecdochic way. Here, the mediating terms name individual cases. But particular properties of these cases are turned into universal features of a generic concept or species. The corresponding form of 'inference' is the form (*U–S–P*):

(*U–S–P*): *A* singular case *S* shows a universal feature *U*, which can be expressed by a generic statement that has the status of particularity and expresses an essential form of a species of things.

At first, this sounds strange. But the situation is well known from the case, in which we use a singular figure in geometry for proving a general statement about the corresponding geometrical form. Since Plato's time, we call such inferences 'epagogical'. We could call them as well 'analogical'. The term 'analogy' means 'equality of expressions'. It articulates the fact that we use the same expressions for referring to the form (of a circle, for example) and the singular instance (an actual figure representing the form). Plato and Hegel would agree against all empiricists that analogical arguments, by which we show general features, mediated by singular cases, are of a different form than inductions. Induction leads to universally quantified statements. Analogical arguments lead to generic statements. Nevertheless, they both belong to the same figure of inferential reasoning, the inference of reflection, because the mediating term has the quantificational status of singularity. Hegel's second figure (*U–S–P*) is formally characterized by the fact that an individual subject *S* has 'two' properties *U* and *P*, which turn out to be one property: It is a property that could be taken as a universal property of any individual subject of a certain class of object (in the mode *U*), but at the same time as a 'generical' property of a species (in the mode *P*). The label 'inference of reflection' alludes to Kant's reflective judgments, which also have the feature that singular cases show general properties.

The peculiar status of generic statements demands careful judgments when we want to apply them to individual cases. They are not *per se* universal statements. A species is not merely a set of individuals. If we look at an individual case, we first have to check if the normality conditions apply that are prerequisite for any transformation of generic statements about forms in a species of forms into a universal statements about a set of individuals. The paradigm case is (once again since Plato's time) the transformation of statements about geometrical forms into statements about geometrical figures or bodies.

Moreover, since we know that the realm of generic statements was the result of 'epagogic' reasoning or analogical inference, we know that we are allowed to make changes in our system of generic judgments about the species in question,

for example when we learn more about the form of being a member in the species *P*. Nevertheless, these generic statement have the status of conceptual statements about the species *P*. They express inferences we may make use of whenever we talk of singular cases of the species *P* — after we have addressed the case as a case of this generic form. We do this on the ground of a judgment that says that the singular case is a good enough example of the generic case.

When I say, for example, that the shape of France is hexagonal, I make a certain claim by which I entitle you to a certain set of inferential consequences. My commitment and your entitlement is, however, not independent of good judgments about a relevant and good enough application of the word 'hexagonal' in the case of shapes of countries. If I say, to take another example, that the movement of the earth around the sun is circular, you may be right to say that it is not circular but elliptic. The relations between the generic cases and the singular cases are v e r y complicated if we look at them in detail. The important point for us here is that no objective empirical knowledge can be articulated if not by implicit reference to generic cases. Or rather, the concept of invariant truth and knowledge is defined on the generic level, not on the level of immediate individual presence in which we articulate qualitative distinctions like: "this rose is red".

But what is the meaning and use of Hegel's third figure (*P–U–S*)? Here, a singular and a particular subject seem to fall under a common universal predicate. The universal is the mediating level for the singular and the particular. In my opinion, we can explain how Hegel thinks of presuppositional inferences if we look at the following examples:

(1) 2:7 is the same as 4:14.

(2) The circle has a centre.

(3) God is good.

In our understanding of these sentences, we have to reconstruct their 'inferential contexts'. 2:7 is the same proportion as 4:14. In other words, it is presupposed that we talk in (1) about proportions or rational or real numbers, not about ratios. In (2), the expression 'the circle' refers to one and only one form if the implicit 'premise' in an inferential context is "The circle is a form". Having a centre is a form also. It is a sub-form or 'moment' of a form. In (3), the inferential context may be "God is a speculative concept referring to the form of the world" or "being good is a speculative concept referring to the form of judgments". The sentence then says that these forms are, in a certain respect, the same. This is the only way how I can make sense of Hegel's claim in Enc. § 191. There he says that, in an inference or syllogism of necessity, the middle term has the status of universality.[17] My basic claim now is this: in Hegel's doctrine

[17] A judgment of necessity '*N* is *P*' (in the sense of Enc. § 177) is a result or consequence of such an inference. Such a judgment '*N* is *P*' says that the predicate contains or articulates the nature or essence of the subject *N*.

of concept, the status of being a synthetic a priori sentence as we know it from Kant is dissolved. It is replaced by the status of a generic sentence that articulates a form of a species of things. The system of these sentences contains much more, and different, sentences or propositions than Kant's class of synthetic a priori truths. It contains all the sentences that we develop in the sciences and encyclopaedias. We use them in an a priori way when we structure our own individual experience or rather our empirical access to the world. With respect to empirical propositions, generic judgments are (relatively) *a priori*.[18] They determine the very content of concepts. They do this in a holistic and systematic way.

Even though generic statements are, in a certain sense, presuppositions of empirical judgments, and, therefore, cannot be immediately corroborated or refuted by singular empirical observation, they are not totally eternal, nor are they independent from experience. On the contrary. They are developed in the realm of experience or rather, in the progress and project of experimentally controlled joint knowledge. When we talk of 'eternal' truth and meaning, we talk about t h e f o r m of the standing sentences by which we make inferences explicit that are 'material' and at the same time 'conceptual'. The real 'infinity' or 'eternity' is the form of the project as such, not the actual form in any actual system of knowledge.

If I am right, then Hegel's avoidance of Kant's notion of synthetic a priori judgments is, at the same time, analogous and very much different to Willard Van Orman Quine's dissolution of the analytic-synthetic-distinction in Carnap's Logical Empiricism. In the following respect Quine and Hegel use similar distinctions: both want to differentiate between the logical status of individual empirical judgments of the 'observational' form: "this rose of there is red" or "this tree over there is green" and generic judgments of the form "roses can be red, white and yellow, but not green" or "trees in spring are green". The latter are Quine's 'standing sentences'. Moreover, Hegel and Quine share a holistic point of view. But they differ already in their attitude to these standing sentences. Hegel understands them not as universal empirical claims about merely 'contingent facts', but as generic articulations of material, nevertheless 'conceptual', inferences. Hegel can do so because he, but not Quine, sees the distinction between universal quantifications of the form 'any individual in a set *N* has the property *P*' and the generic reading of a sentence of the form '*N* is *P*'. This reading asks from any 'hearer' not to use the sentence thoughtlessly, schematically, but to make autonomous judgments about its proper use in any singular occasion.

[18] Hegel distinguishes empirical or 'qualitative' propositions like "this rose is red" or "Caesar was born then and there" or "there is a carriage driving by" (§167, 172) from generic judgments, but also from emphatic judgments of the form: "the noise was produced by a carriage that was driving by". Qualitative judgments of the category *Dasein* (or 'presence') say what is h e r e. They contain deictic elements or situation-dependent anaphoric references.

Hume had been right to say that no schematic and universal inference rule is sufficiently justified by individual observations. But this fact should not mislead us into a skeptical theory of radical indeterminacy of meaning and conceptual inference. It rather should convince us that we need another understanding of conceptual inferences. They are not universal, quantified, schemes of deductions. They rather are articulations of generic knowledge and default rules of inference.

As far as Robert Brandom reads Hegel in this way, I fully support his reading. As far as he thinks of logical inferences as formal, schematic, inferences that can be represented by a system of formal deductions or formal norms of dialogical commitments, entitlement and 'consistency' I do not. In formal systems of inferential rules we only can make 'universal' quantification explicit, but not the much more complicated practice of generic reasoning.

Without implicit reference to a whole framework of conceptual forms, there cannot be any reference to an empirical object at all. This fact shows a deep problem with the use of the words 'empirical' and 'experience'. Quine's empiricism still falls prey to a deep rooted dogmatism in the tradition of Locke and Hume, even though Quine wants to overcome the traditional idea of 'rationalism', which wants to distinguish formal rules of analytical inferences from material inferences that already 'have' empirical content — or rather define the notion of content, as we could say in the spirit of Brandom's approach. To show this in detail, especially when it comes to the status of generic statements, would need a more thorough investigation. But the general point can be seen already now: We use generic sentences as conceptual truths. They are not merely analytically true sentences in the sense that they are made true by arbitrary definitional stipulations in a deductive language game as we know it from working with axiomatic deductive systems. Rather, the generic sentences articulate material distinctions and default inferences that are connected to such distinctions. We may think, for example, of sentences like the following:

(1) Birds have feathers.
(2) Man can speak.
(3) What lives, dies.
(4) Most birds can fly.
(5) Most people can calculate.

None of these sentences expresses singular empirical facts as, for example, the fact that little Peter cannot speak yet or that the bird Peewee, being a penguin, cannot fly. Sentences like:

(6) Babies under 8 months cannot speak.
(7) Penguins cannot fly.

are also not 'empirical' but conceptual. We arrive at them by a judgment of reflection: We need to find the appropriate subclass that turns the merely sin-

gular proposition about Peter or Peewee into a generic statement.[19] These statements alone express some objective 'experience' (*Erfahrung*) in Kant's sense. As such, they are presupposed when we talk about baby boy Peter or our penguin Peewee, just as we presuppose that any living being will die, if we like it or not, just because the very concept of life includes, as Hegel would say, its opposite, namely death, in exactly the sense, which turns (3) into a conceptual statement. But (2) is a conceptual statement also, even though not only our toddler Peter may not speak yet but some adults are, as we know, also incapable of using language. This empirical fact does not refute the generic truth. It rather shows that applications of generic (or conceptual) truths in singular empirical cases still require good, experienced, judgments.

Such judgments answer to the question if normal conditions for applying the conceptual truth are fulfilled. Conceptual truths cannot be applied 'blindly' or 'thoughtlessly'. Their proper use has to be checked in a 'judgment of concept', by which we determine if an empirical subject is 'a good enough' example of a conceptual determination or if it 'truly' falls under the concept.[20] According to this understanding, predication is not just a subjective attribution of a predicate to the subject. The speaker does say that the subject *has* the property expressed by the predicate[21] or, as Hegel says, that subject and predicate are 'identical' (§ 166). This way to read the 'is' as an identity seems to be weird, especially because we would want to take sides with Kant and Frege against Hegel and distinguish predication from identity. But according to Hegel, a sentence like

(8) Peewee is a penguin

says that the creature I refer to by the name 'Peewee' can be referred to by the name 'this penguin' as well. Hegel's 'identity theory' of predication says not much more than this: What we refer to by N can be referred to by *P* as well and vice versa. Hegel does not care for the fact that we have to change the syntactic form of *P* when we want to do this and turn it into a 'singular term' denoting 'locally' the same as *N*. This shows, once again, that Hegel is not at all interested in formal deductive logic. Nevertheless, Hegel's reading of the copula

[19] Cf. Enc. § 174: In a judgment of reflection the singular is already related to other things in the world. And this is expressed by a predicate that is not defined in its truth conditions by relatively immediate qualities. Hegel's example is the predicated 'curative'. In § 175 he says that particularity is extended to a kind of universality, the generic statements about normal behavior turn into all-quantification about all things that behave normal.

[20] Cf. Enc. § 178: A judgment of concept says if some judgment is good or true enough — with respect to the conceptual or generic inferences in question.

[21] Cf. §§ 166, 167. The problem is, of course, to explain the objective sense of a claim that *N* is *P*. The answer is that the object *N* itself is determined by *P* and that the speaker as a subject says that this holds objectively, independently of his subjective judgment. I.e. the speaker makes an appeal to an objective realm of 'conceptual' truth to which he is and remains committed.

'is' as a kind of identity can be helpful, especially in an analysis of 'speculative' sentences like

(9) God is the all-mighty, the all-knowing and the all-good.

For Hegel, a sentence like this does not say that there is an individual entity called "god" having the transcendent properties of being at the same time all-mighty, all-knowing and all-good. When we want to understand the sentence, we rather have to figure out first how the relation of the noun phrase *N* and the predicate *P* in the sentence *N*(*P*) has to be read. Hegel's answer is this. We use the word 'god' in order to articulate the 'infinite' idea of power of existence or of possibility, of knowing or truth, and of goodness in forms of life. We do so in a metonymic way. In other words, (9) is a definition for a certain use of the word 'god'. Since we always have to reflect on the subjects who make judgments about existence and possibility, knowledge and goodness, it is not even bad that god has personal features. But we should not misread speculative sentences of this sort as if they were talking about a 'finite' being and not about an idea or ideal form.

Hegel never cares for details, to the chagrin or annoyance of any formal logician, to be sure. On the other hand we better keep in mind what Hegel addresses and what he thinks to be relevant. Formal deductions and formal definitions as we use them in mathematics or in terminological trees of taxonomical science since the times of Aristotle are not in the focus of his logic. The particular technique of defining the differential and inferential meaning of a verb phrase or predicate *P* by using recursive schemes of reduction is not the topic of his philosophical logic at all. Indeed, we may use any scheme of definition we feel happy to use. But we should not overestimate the place of formal definitions: They allow for a system of intra-language inferences that can be learned to be handled schematically. They might help us to make implicit inferences explicit, as Brandom says. But they do not tell us anything about the status of the material inferences that are made explicit by them.

Even though I think that a projection of Brandom's ideas in *Making it explicit* onto Hegel's Logic is perfectly legitimate and may help us to improve our understanding of his ideas of subjective and inter-subjective differentiations and inferential commitments, entitlements and 'contradictions', there are essential limits in this way of seeing things. The questions of Hegel's philosophical logic lie far beyond or rather far below any formal technique of making differentiations and rules of inferences explicit. More importantly, Hegel does not 'explain' how it can come about that we can use 'joint' concepts. He rather reflects on what we usually do when we use concepts. I.e. the form of analysis is presuppositional, transcendental, not explanational.

What Hegel cares for most seems to be the way we have to determine not only the relation between *N* and *P* in sentences of the form '*N* is *P*' but the very reading of *N* and *P* in such a sentence. His answer is that we have to determine

the reading of *N* in dependence of the reading of *P* and vice versa. I.e. we do not build up the meaning or truth condition of ('elementary') sentences from independent atomic parts, *N* and *P*, just by putting the copula 'is' between them. The copula is no relation between independently determined things, namely subjects and predicates. Rather, the copula is a sign to look for the 'identity' of *N* and *P*, i.e. for the realm in which *N* either names a singular object or refers to a whole class of such objects and in which *P* defines a subclass — or for a generic or conceptual reading of *N*. In the first case we say by the sentence that the object named by *N* has the property *P*, in the second case we say that all the *Ns* have the property. We have to figure out the 'identical' realm for *N* and *P* in the case of empirical propositions. And we have to figure out the relevant species in the case of conceptual propositions. We do this on the ground of some kind of 'inferences' or 'syllogisms', i.e. by searching for mediating terms or propositions.

The mediating terms or propositions can be of the status particularity, singularity, and universality. In the first case, the mediation between *N* and *P* is a system of generic knowledge. In the second case, the mediation is of the form of an analogy or an induction and the resulting proposition is a generic statement. In the third case, the mediation is of the status of universality. The result is a particular judgment. Any particular form or generic knowledge is still a mere moment in a development of the system of concepts, which Hegel calls 'the concept' and at the same time 'the object'.[22] He does so because he is willing to use generic or rather 'speculative' sentences like "the concept is the absolute" or "god is the absolute" or "the concept is god" anyway. I certainly would prefer to avoid this form of speech even though it is used in theological seminars until today. I prefer translations into more urban languages. In order to show how I see things I look at Hegel's defense of the ontological proof of the existence of god.

(10) God exists.

(11) God is the system of all concepts.

(12) The system of all concepts includes existence, since it is the very realm in which it is determined what exists and what not.

Obviously, Hegel does not think that a concept is a finite predicate of the form 'having 30 dollar in the pocket'. He rather thinks of a whole practice of making distinctions in the world as it is presupposed in any finite or empirical distinction. He claims that Anselm's or Descartes' version of the ontological proof of the existence of god can be understood as a conceptual statement about what we do when we talk about god. We want to talk about the whole system of being and understanding and truth. This system is the 'greatest' object we can think about. It is the very concept of existence and truth, being, essence and concept. As a result, Hegel claims that traditional theology is just an early and

[22] This rather strange way of identifying the object with the whole of all its relations to other objects goes back to the monadology of Leibniz. It explains why in the end the object in this all-inclusive sense is god.

underdeveloped version to do logic. It has to be freed from a dogmatic and misleading ontic understanding of the word 'god'. The real and good form of doing theology is — abandoning it and doing conceptual analysis of the human form of life, together with a logical analysis of the various forms to make this form verbally explicit and develop our autonomy by doing so. Brandom is therefore absolutely right to stress the importance of logical analysis for explicit consciousness and self-knowledge. The only point of possible differences concern the question what logical analysis is and what it is good for.

After turning away from mythological theology, we can, if we wish, still use the word 'god'. But we must know that if we say that god exists or that god is the truth or that god is good we do not say that there is an entity called 'god' that has a property like existing or telling the truth in a bible. Nor is it right to say that God is good 'to his creatures'. Rather, we use the word 'god' in a metonymic way in order to talk about the idea of absolute truth, absolute being or existence or, when it comes to questions of ethics, absolute goodness. When we do so, we refer to the whole project of developing human practice. But what is the 'truth' of 'speculative' statements on this 'absolute' level of reflection on being, truth and knowledge? This question does not only concern traditional theology. When, for example, the physical sciences claim to have an absolute concept of truth or present the only real knowledge or the real world, Hegel attacks this materialist or physicalist view under the title 'mechanism' as wrong metaphysics. It represents a wrong understanding of the doctrine of absolute truth, knowledge and nature. The 'real' truth of mechanism as a form of explanation of nature is that it is only a province in human instrumental reasoning, which is, in turn, only a province in human ethical life. In other words, atomistic materialists and decision theorists as Thomas Hobbes are provincial thinkers, just because they claim that their limited concept of nature contained the whole world and that their limited and subjectivist concept of rationality contained the whole concept of human reason.

Empiricism and scientism are dogmatic because of their unnoticed presuppositions. It is a deep irony, therefore, when Hegel is attacked for talking about absolute claims. The messenger gets punished for the message. The message is that atomistic scientism and empiricism are theories of absolute truth and knowledge and propose allegedly 'objective' claims about sense perceptions as the 'real' basis of knowledge and truth. A similar point holds for the parallel 'sentimental' theories of happiness and goodness in the traditions of ethical empiricism.

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