

Hegel on the Naturalness of Logic: An Account Based on the Preface to the second edition of the *Science of Logic*

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Abstract

The preface to the second edition of Hegel's *Science of Logic* is crucial for understanding the idea of Hegel's logic. It is an important text because what Hegel writes is not an idiosyncratic view about logic, but rather something universally true about the object, scope, and nature of logic. Something that can genuinely dialogue with more recent, and perhaps more sophisticated, accounts of logic. One central aspect of Hegel's argumentation in the preface is the idea that *logic is natural*. In this paper, I focus precisely on this aspect, addressing four Hegelian theses about the naturalness of logic.

Keywords: Hegel's logic, Natural logic, Natural language, Logical forms, Dialectics.

1. Introduction

The preface to the second edition of Hegel's *Science of Logic* can with full rights be counted amongst the classic texts of the history of philosophy. It is a classic text because it presents in a stylistically beautiful (almost poetic) way one key philosophical idea—the very idea of Hegel's logic. It is classic in that what Hegel writes is not his idiosyncratic view about logic, but rather something universally true about the object, scope, and nature of logic. Something that can genuinely dialogue with more recent, and perhaps more sophisticated, accounts of logic.

One central aspect of Hegel's argumentation in the preface is the idea that *logic is natural*. In what follows, I will focus precisely on this aspect, addressing four Hegelian theses about the naturalness of logic, namely:

1. The forms of thought permeate all our thoughts, actions, feelings, desires, representations and ideas. They are deposited in human language—they “pass our lips in every sentence we speak”. They are the natural element in which human beings live. Hegel calls this linguistic, logico-natural element in which we live *das Logische*.

2. There is a difference between the unconscious use of the forms of thought in everyday thinking and reasoning (*natural logic*), and their thematic consideration (*logic as theory*).
3. Logic as theory may be carried on in a limitative way, that is, when we consider the forms either as means for us (whereby *we* are means for *them*), or as merely accessorially attached to the content of our thought (whereby they are what is basic and substantial about the content of every thought).
4. There is a difference between the treatment of *das Logische* in the logic and metaphysics of Hegel's times and its truly scientific treatment. While the manuals of Hegel's times "kill" the forms of thought, the task of logic as science is restoring the natural life of *das Logische*.

In the following pages I present these theses in more detail, asking: how do they relate to current ideas about logic, and about the relationship between logical forms and natural language? In this context, I will limit myself to present Hegel's account, hinting in the conclusion at one idea suggested by Russell in 1914. It is the view that logical forms are deposited in human language and thought, and that the task of *philosophical logic* is to "extract the forms from their concrete integuments", and render them "explicit and pure" (Russell 1914 [2009]: 35). This idea, which I call for simplicity *E* (from *extracting forms*), is explicitly shared by some contemporary philosophers of logic, among them Lowe (2013: 1) and Sainsbury (2001: 1). In my view, *E* constitutes a genuine common ground for a possible dialogue between Hegel's idea of logic's naturalness and recent accounts of philosophical logic.

2. *Das Logische* is the Natural Element in which Human Beings Live

As Hans-Georg Gadamer (1976: 78) pointed out, Hegel coins a new expression, which cannot be found before him: "the logical" (*das Logische*). In the *Lectures on the history of philosophy*, Hegel talks about the "beautiful" ambiguity of the Greek language, for which *logos* means both reason and language. Thanks to this ambiguity, the Greeks were able to express the idea that natural language has a logical nature, an idea Hegel was particularly fond of.¹

At the beginning of the preface Hegel writes:

The forms of thought are, in the first instance, displayed and stored as human language [...] Into all that [we think, do, feel, represent] [...] into all that we make our own, language has penetrated, and everything that we have trans-

¹ See Gadamer (1976: 78). In English translations, the term *das Logische* is often rendered with "logic" (see for instance Hegel 1969: 36-37), but this could be misleading, as it risks overlooking important philosophical implications. Nuzzo (1997: 41ff.) considers Hegel's distinction between "logic" and "the logical". See also Nuzzo (1992: 193-98, and 281 note 84). Fulda (2006: 25-27 and 32ff.) stresses that "the logical" is the field of Hegel's "first philosophy" or metaphysics. D'Agostini (2000: 95ff.) examines the consequences of Hegel's new use for the relation between logic and metaphysics. Labarrière (1984: 35-41) and more recently Caron (2006: 149-83) propose a theological interpretation of "*das Logische*". Di Giovanni (2007: 85-87) rejects the theological interpretation, stressing that the expression "*das Logische*", in Hegel, stands for the field of language and thought that constitutes the subject matter of Hegel's *Science of Logic*.

formed into language and express in it contains a category—concealed, mixed with other forms or clearly determined as such, so much is logic [*das Logische*] our natural element, indeed our own peculiar nature (Hegel Werke 5: 20).

Hegel uses interchangeably the terms “forms of thought” and “categories”. This use could seem weird from a contemporary point of view, for which categories, as the basic structures of reality, are dealt with in ontology and metaphysics, while the forms of thought or valid inference are the subject matter of logic. For Hegel, both essentially belong to the field of *das Logische* insofar as they are forms of our thought that claim to be forms of our thought about reality. In short they are, or claim to be, forms of truth. Gadamer puts this aspect in perhaps clearer terms when he recalls that the expression *das Logische*, in Hegel, has roots in both, ancient metaphysics and transcendental philosophy. Gadamer suggests that Hegel uses *das Logische* in the same way that the Greek philosophers used the word *logos*, as an equivalent to “reason”, as the realm of *concepts* or *forms* which are expression of the nature of reality, the universal and pure entities constituting and ruling human language and reasoning.² At the same time, Hegel conceives *das Logische* as self-reflexive thought and, in this, he follows the Kantian and Fichtian transcendental tradition.

The Hegelian *das Logische* is not only the field of the forms of reality, but also and at the same time the field of self-reflexive thought. And self-reflection is natural, for human beings. It is our peculiarly human trait of thinking about ourselves. As Hegel puts it: “Because human spirit is essentially consciousness, this self-knowing is a fundamental determination of its *actuality*” (Hegel Werke 5: 27).

The nature of *logos/das Logische/der Begriff* as self-reflexive thought will turn useful later, in the context of the discussion of the fourth thesis.

That *das Logische*, so conceived, penetrates all our ideas, actions, purposes etc. means, for Hegel, that our language contains (sometimes conceals) pure forms and categories: “[we employ] those determinations of thought on every occasion, [they] pass our lips in every sentence we speak” (Hegel Werke 5: 22).

We always use categories (we use “being” and “quantity” when we say “two cats are on the mat”), thought determinations or semantic terms (we use “sentence” and “true” when we say “Blasey Ford’s statements during the Senate Judiciary Committee hearing are true”). Finally, we always use inferential forms—to recall a famous Hegelian example:

If any one, when awaking on a winter morning, hears the creaking of the carriages on the street, and is thus led to conclude that it has frozen hard in the night, he has gone through a syllogistic operation—an operation which is every day repeated under the greatest variety of complications (Hegel Werke 8: 335).

3. Natural Logic is the Unconscious Use of the Forms of Thought, while Logic as Theory Makes them the Object of Inquiry

However, while logical forms may be thoroughly familiar, for the most part we use them unconsciously.

² Gadamer 1976: 78.

The activity of thought which is at work in all our ideas, purposes, interests and actions is [...] unconsciously busy (natural logic) [...] To focus attention on this logical nature [...] this is the task (Hegel Werke 5: 26-27)

“*Das Logische*” and “logical nature” refer to logic as an objective fact, independent from human decision, they denote the natural field in which logical forms emerge. “Natural logic” expresses the natural and unconscious activity of using these forms. Our “task” is to focus attention upon the forms of thought, making them the object of inquiry. They are used unconsciously, and we have to bring them into consciousness. This enterprise can be carried on in terms of what Hegel calls “*die Logik*”, the theory or discipline that isolates and fixes the forms of valid inferences, “extracting them” from human language and life.

Plato and Aristotle were the first philosophers who managed to

[free the forms of thought] from the material in which they are submerged in intuition, representation, and in our desiring and willing [...] and [made] these universalities objects of consideration (Hegel Werke 5: 22).

The work, initiated by Plato and Aristotle, and carried on by the philosophers, logicians and metaphysicians in the subsequent history of philosophy, of making the forms of thought the object of the logical consideration, contributing to establishing logic as theory, is for Hegel of extreme importance. The separation of the forms from their nature (from their natural but impure occurrence in everyday language, thought, desire, will etc.) is fundamental, for Hegel. It marks the birth of logic as theory. At the same time, Hegel warns against the limits of logic as theory.

4. Logic as Theory Misunderstands the Nature of the Forms of Thought

4.1. Logical Forms are not Means for Us, We are Means for Them

A first limit is that, in making the forms the object of our study, we are led to taking them as mere means:

Such a use of categories, which above was called natural logic, is unconscious; and when in philosophical reflection the categories are assigned the role of *servicing as means*, then thinking as such is treated as something subordinate to the other activities of mind [my emphasis] (Hegel Werke 5: 24).

Thus treating the forms as means implies thinking about them as subordinate to all our other activities—for example, we take the forms as means when we consider the knowledge of logical and argumentative laws as a way to think clearly, to act in a more effective way, to take good decisions in life. This approach, however, is misleading. It forgets that the forms permeate all our ideas, feelings, impulses, will, and that they rule everything. To go back to Hegel’s own example, if any one, when awaking on a winter morning, hears the creaking of the carriages on the street, and is thus led to conclude that it has frozen hard in the night, he has not only gone through a syllogistic operation, but his

very actions and decisions are ruled by that same operation. In another context,³ Hegel writes about the march of cold necessity that inferential rules force upon us. If this is so, how can the forms be means for us?

Rather [...] we are means for them [...] they have us in their possession; what is there more in us as against them, how shall we, how shall I, set myself up as more universal than they, which are the universal as such? (Hegel Werke 5: 25).

4.2. Logical Forms are not Accessorily Attached to the Content, They are What is Essential and Substantial About Every Content

A second misunderstanding that can arise in establishing logic as theory is taking the forms as only contingently attached to the content, and not as themselves content:

The activity of thought which is at work in all our ideas, purposes, interests and actions is, as we have said, unconsciously busy (natural logic); what we consciously attend to is the contents, the objects of our ideas, that in which we are interested; on this basis, the determinations of thought have the significance of forms which are only attached to the content, but are not the content itself (Hegel Werke 5: 26).

Since the forms are present in all our thoughts, actions and interactions, and since what we are normally interested in when we think, act and interact are the contents of our thoughts/actions etc., then we may think that the forms are an accessory part of our actions, purposes, ideas. For instance, to go back to Hegel's example, what I am interested in about the reasoning "I hear the creaking of the carriages on the street, and thus conclude that it has frozen hard in the night" is not the inferential form "if A then B, A hence B", but rather that it has frozen and that I cannot take my bicycle to go to school. However, what is erroneous for Hegel is the assumption: I am interested in the content of the inference, hence inferential forms are merely accessory features, and have no relevance whatsoever concerning the content. Hegel reacts against this assumption, claiming that the forms of thought are the substantial part of every content.

But if [...] the nature, the peculiar essence, that which is genuinely permanent and substantial in the complexity and contingency of appearance and fleeting manifestation, is the notion of the thing, the immanent universal, and that each human being though infinitely unique is so primarily because he is a human being, and each individual animal is such individual primarily because it is an animal: if this is true, then it would be impossible to say what such an individual could still be if this foundation were removed, no matter how richly endowed the individual might be with other predicates, if, that is, this foundation can equally be called a predicate like the others (Hegel Werke 5: 26).

Following the ancient Greek account of the universal or *logos*, Hegel recalls that the universal is the fundamental predicate that expresses the substance or essence of individual things: "being a human being" is the foundation without

³ See the preface to the *Phenomenology of Spirit* (Hegel Werke 3: 15-16).

which the individual Georg Wilhelm Friedrich Hegel would not be the particular individual being he is, “being an animal” is the fundamental predicate without which our canary Sandrino would not be what he is. To return to Hegel’s example, the content of the inference “I hear the creek of the carriages on the street and conclude that it has frozen hard in the night [and that I cannot take my bike to go to school]” is rooted in its form, and its form is rooted in the universal or notions of the thing.

This means that the universal or *das Logische* or the *logos* is the notion (the conceptual grasp) of the thing, the truth about things. As Hegel claims:

The concept [*der Begriff*] [...] the logos, the reason of that which is, the truth of what we call things; it is least of all the logos which should be left outside of the science of logic (Hegel Werke 5: 30).

The last Hegelian thesis about logic’s naturalness can now be addressed:

5. The Task of Logic as Science is to Restore the Natural Life of *das Logische*

Traditional logic and metaphysics as theories are, for Hegel, important inquiries. Their materials are a fundamental reference point for any development of logic as a science, to be acknowledged with gratitude. However, logic and metaphysics as theories present the forms of thought in a fragmentary way, they do not see their relations, interplays and developments. In so doing, they fail to do justice to the genuine nature of *das Logische*. Hegel writes:

The profounder basis is [the pure concept] which is the very heart of things, their simple life-pulse [...] To focus attention on this *logical* nature which animates mind, moves and works in it, this is the task (Hegel Werke 5: 27).

For example, the logic as theory of Hegel’s times fixes the law of identity as $A = A$ and considers it as a fundamental law of truth (see Hegel Werke 5: 30ff.). But, as Hegel (as well as most philosophers of his times)⁴ remarks, nobody thinks or speaks according to it. Nobody thinks in terms of identity, stating “a plant is... a plant”, “a casserole is... a casserole”. These rules and forms are not genuine forms of truth:

The rules of inference [...] quite as well serve impartially error and sophistry and [...] however truth may be defined [...] they concern only correctness and not truth (Hegel Werke 5: 29).

For this reason Hegel underlines that the genuine form of truth is *das Logische* or the concept [*der Begriff*], and not the forms of thought as they are

⁴ In Hegel’s times the idea about logic’s dullness was common. Hegel criticized the limitative treatment of the forms of thought in the logic and metaphysics as theories, but he also underlined that traditional and Aristotelian logic must be studied and regarded as an extremely important reference point for any work in logic. Hegel also sharply criticized the dismissive attitude towards logic typical of the romantic philosophies of his times. See on this Krohn (1972: 56) and Ficara 2019b.

fixed by the logic and metaphysics of his times. By this he means the basic self-referential activity of thought. He writes:

When those determinations of thought which are only external forms are truly considered in themselves, this can only result in demonstrating [...] the untruth of their supposed independent self-subsistence, that their truth is the concept. Consequently, the science of logic in dealing with the thought determinations which in general run through our mind instinctively and unconsciously [...] will also be a reconstruction of those which are singled out by reflection and are fixed by it as subjective forms, external to the content (Hegel Werke 5: 30).

Hence the task of logic as science is not only to pay attention to the instinctive and unconscious forms of thought sunk in natural language, but also to analyse the forms that the logic and metaphysics as theories have already extracted and fixed. This analysis shows that they are not the forms of truth they claim to be, and roots them in the concept or logos, which is the same self-reflexive activity of thought, the process of making our thought processes and forms the object of our thought.

In sum, if we reconsider the four theses presented by Hegel in the preface to the *Science of Logic* second edition, we see that the question about the naturalness of logic runs through them at different levels.

i. Logic is natural in the sense that the realm of “das Logische”, which includes categories, reflexive concepts, inferential forms, *permeates natural language*. Our languages contain names for categories, such as ‘being’, for reflexive or semantic concepts, such as ‘concept’, ‘sentence’, ‘true’; our reasoning follows logical patterns. Most importantly, our languages can contain substantives and predicates expressing the self-reflexive and dialectical nature of thought, terms such as “*Aufhebung*” (which means “overcoming and maintaining” and unifies two opposites).

ii. Logic is natural in the sense that logical forms run *instinctively* and *unconsciously* through all our thinking, reasoning, feeling, acting. The task of logic as theory is to bring this logical nature into consciousness.

iii. Logic is natural in the sense that it (intended as dialectical logic) “brings life” into the theoretical treatment of *das Logische*. The logics and metaphysics of Hegel’s times extract the forms of thought from the materials in which they are submerged in a way that “kills” the logical concepts and forms. They fix the forms, isolate them from one another, from their content and their roots in human life and self-reflexive thought. The task of dialectics (logic as science) is to trace the forms back to the self-reflexive activity of thought, restoring the natural dynamicity of *das Logische*.

6. Conclusion

Is Hegel’s account about the naturalness of logic at all relevant for us today? How is it related to debates about the relationship between logical forms and natural language in philosophy and logic? The research on this field is immense

and has no clear boundaries.⁵ It ranges from works on naturalness in the systems of natural deduction,⁶ to works on “natural logic”—whereby the expression “natural logic” is not always used univocally,⁷ to works on the psychology of reasoning,⁸ and to more general researches on the scope and meaning of logic.⁹ I limit myself here to hint, by way of conclusion, at one common ground for a possible dialogue between Hegel’s idea of logic and recent accounts of philosophical logic. It is what I have called *E*, a notion that goes back to Russell 1914.

Points *i.* and *ii.* concern the insight that logical forms permeate our language and natural reasoning, we use them unconsciously (they “pass our lips in every sentence we speak”) and the task of logic as theory is to make them the object of inquiry. So conceived, *i.* and *ii.* are common presuppositions in philosophical logic, shared at least by those logicians who follow Russell’s account of philosophical logic in 1914. Russell writes:

Take (say) the series of propositions “Socrates drank the hemlock”, “Coleridge drank the hemlock”, “Coleridge drank opium”, “Coleridge ate opium”. The form remains unchanged throughout this series, but all the constituents are altered. Thus form is not another constituent, but is the way the constituents are put together. It is forms, in this sense, that are the proper object of philosophical logic. It is obvious that the knowledge of logical forms is something quite different from knowledge of existing things. The form of “Socrates drank the hemlock” is not an existing thing like Socrates and the hemlock [...] some kind of knowledge of logical forms, though with most people is not explicit, is involved in all understanding of discourse. It is the business of philosophical logic to extract this knowledge from its concrete integuments, and to render it explicit and pure (Russell 1914 [2009]: 34-35).

The Hegelian spirit of this quotation is outright clear.¹⁰ Logical forms for Russell (as well as for Hegel) are always involved in our concrete talking with each other and understanding each other. They have “concrete integuments”. Our talking and reasoning follows logical patterns, and this often happens implicitly, without any precise awareness on our part. The task of philosophical logic is then to “extract the knowledge about forms from its concrete integuments”, making the logical structure of our thinking explicit. Also for Hegel, the task of logic (as both theory and science) is to make our unconscious, implicit and impure use of the forms conscious, explicit and pure.

⁵ For an clarifying overview on the research about the several meanings of “logic’s naturalness” in contemporary philosophy of logic *vis à vis* Schopenhauer’s account about the naturalness of logic see Schüler, Lemanski 2019.

⁶ Gentzen (1969: 68-131). “Natural” is for Gentzen (1969: 68) a calculus that comes as close as possible to actual reasoning. For a similar account about logic’s naturalness see Jaskowski (1934: 5-32), Tennant 1990, Ludlow 2005, Sanchez 1991.

⁷ For Lakoff (1970: 254) natural logic is the empirical study of human language and thought, for van Benthem (2008: 21*ff.*) a system of reasoning based directly on linguistic form.

⁸ Wason, Johnston-Laird (1972).

⁹ On logic’s rootedness in the world see Sher 2016. On the role of natural reasoning for the revision of logic see Priest 2014, Priest (2016: 29-57) and Allo (2016: 3-31).

¹⁰ On Russell’s idealistic philosophical formation see Hylton (1990: 2*ff.*).

Russell's idea is explicitly shared by some contemporary philosophers of logic, among them Lowe (2013: 1) and Sainsbury (2001: 1). The idea of logical forms as (special kinds of) "linguistic facts" "submerged" in natural language and thought is at the very basis of the preliminary way in which contemporary philosophy has conceived the notion of "philosophical logic". Following Russell, many contemporary authors define philosophical logic as *the attempt to formalise natural language*,¹¹ which might be performed by constructing mathematical models or more or less idealized languages. In any case, "formalisation" still means, ideally, what Russell calls "extracting" the forms that are entangled in our ways of speaking and thinking.

The last point (*iii.*), expresses the need to think about forms in new terms, and to introduce self-reference and dynamicity into the static field of traditional logic. It introduces Hegel's critique of traditional logic, and anticipates reflections on logic revision¹² in non-classical logics.¹³

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¹¹ Sainsbury (2001: 1), Jaquette (2007: 1), Cook (2009: 221).

¹² On logic revision see Priest 2014 and Priest 2016. On logic revision in Hegel and Priest see Ficara 2019a. The literature on Hegel's dialectics *vis à vis* non-classical logics is relatively rich. See Marconi 1979, Routley, Meyer (1979: 324-53), Apostel (1979: 85-113), and more recently Priest (1989: 388-415), Berto 2005, Ficara (2013: 35-52).

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