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NINETEENTH-CENTURY LIFE SCIENCES AND HEGEL'S ORGANIC VIEW OF SYSTEMS

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CONTENTS

INTRODUCTION

In Romantic and post-Romantic thought the abstraction of an "organism" is referred to in the most varied of contexts; for example, to explain living beings, or describe the state or scientific systems like the disciplines of philosophy or physics. Hegel understands the expression "organism" partially in accordance with the principles of Kant as a "system of purposes",[1] as does Fichte, Schelling and Marx. In the wake of Kant's implicit differentiation all of these thinkers also contrast the "organic" and "mechanical" points-of-view as fundamentally different perspectives.

While Kant inspired such distinctions, the post-Kantian transcendental philosophers think Kant's own view of reason and of the organic is too confining to allow for a full description of reality, in short, seeing his view as too mechanistic. They thus seek to broaden the view of reason and to include the organic, not as a mere determination warranting rational faith, but as one of the fundamental categories of reason. In so doing they also attempt to win a more secure place for the sciences of life within a transcendental framework.

Given these facts, it is remarkable that the implications of this concept in this time-period have hardly been systematically developed, neither in general, nor for the individual thinkers of the era. In this work I would thus like to help compensate for this weakness in the literature by specifically considering Hegel's view of the organism concept, both explicating it and critically reflecting upon it. Specifically, I shall elaborate Hegel's view as developed in the logic and applied to various parts of his system. I shall also explore how Hegel's views are related to the stances in the life sciences of his day.

Hegel shares the two above-mentioned concerns of the his idealistic contemporaries. He thinks it necessary to include the organism in his list of thought determinations as he attempts to improve upon and complete Kant's category table; for without it important aspects of experience are thought

[1] Immanuel Kant, Kritik der Urteilskraft (Kuk), § 67.

to be inadequately explained. In including the concept in his logic, Hegel also wants to secure the place of the life sciences among the exact sciences. The Kantian background is of essential importance in understanding Hegel's motivations and viewpoints, for in the development of organics he – like so many of his contemporaries - show a mixed reaction to Kant. While Hegel is still were very reliant upon the basis Kant had established, finding many of his fundamental ideas implicit, but underdeveloped, in his theory, Hegel is dissatisfied with the Kantian view of life.

In the case at hand Hegel accepts two essential positive elements: first of all, as mentioned, Hegel defines an organism much along the lines that Kant does. More specifically than viewing the organism as a system of purposes, Kant further determines it as an organized whole in which each part is seen as a "tool", serving the purpose of the whole, while at the same time the whole is seen to serve the parts that serve it; or as Kant says, it is a product "in which everything is at the same time both an end and means."[2] Second, Kant also extends his view of the organism to make room for objects outside of the plant and animal kingdoms. Not only are these organisms, so is the Architectonic of reason, the idea as a whole.

Hegel accepts all of this, but does not think it goes far enough; for Kant does not include the organism or teleology in his categories, but merely posits the teleological principle as a heuristic tool, a "regulative" principle. While it is necessary for making sense of certain aspects of reality, it is not constitutive of reality. By this, Kant relegates teleology, and with it the life sciences, to the realm of rational faith. Teleological ideas are not included in the table of categories; and the principles of the life sciences are not secure. Accordingly, those sciences are not exact or real ("eigentliche"). Hegel, like other German transcendental philosophers, attempts to overthrow this view. He rejects the distinction between regulative and constitutive principles, as do his idealist contemporaries, and goes on to include some of the regulative principles - which Kant develops in his attempt to "unify"

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[2] Kant, KuK, B296.

reason - into the general framework of the logic. Embedding them in the logic, he then argues that reason supplies the principles of the life sciences, and in this way provides a secure "apriori" moment necessary for organics to be truly scientific.

So, according to Hegel, the organism concept serves as more than a helpful heuristic device for making sense of certain aspects of reality; instead, it fittingly describes certain sorts of objects. In all of this he basically argues that the concept is more sufficient and fundamental than Kant thinks. But that is not all that Hegel offers. He also goes on to develop the idea of the organism in some respects (interestingly, in ways that parallel the views in early-nineteenth-century organics). While he accepts that an organism is an object "in which everything is at the same time both an end and a means", he goes on to argue that organic objects also entail three processes: 1) they have a form or structure (Gestalt) entailing inner processes; 2) they assimilate things external to them, thereby making them a part of themselves; and 3) they reproduce themselves.

While these latter additions to Kant's view parallel certain perspectives in the natural sciences, Hegel claims to logically deduce them, then to apply them to areas of empirical science. In short, he sees himself as developing Kant's ideas as a transcendental philosopher. Offering a logical view of the organism, he then argues that every system showing a systematic and rational connection of its parts in a whole is an organism.[3]

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[3] Both Hegel and Schelling argue that philosophy is an organic whole, in which all systems can be unified. Schelling expresses this so: "Nicht vertilgt werden sollen die Systeme, sondern zusammenbestehen, wie die verschiedenen Systeme in einem Organismus und durch dieses ihr Zusammenbestehen eine Ansicht erzeugen, die über allen einzelnen liegt..." (Schelling, Ausgewählte Schriften, vol. 4, 375).

In embracing such an organic holism, Schelling (like Hegel) basically contends that there are no "private languages" or "private interests" guiding the individual systems, which isolate one completely from another. Instead, each of them is accessible; they are guided by the same laws of logic and thought and language. All the systems form a system net; and they are able to be unified because they are all grounded in principles of reason.

Hegel goes a step further than Schelling in clarifying that the sub-systems comprising the "system of systems" retain an essential function. In being taken into philosophy, they still retain their differences. As he writes in the Vorlesungen über die Geschichte der Philosophie: "Nur das Lebendige, das Geistige rührt sich in sich, entwickelt sich. Die Idee ist so - konkret an sich und sich entwickelnd - ein organisches System, eine Totalität, welche einen Reichtum von Stufen und Momenten in sich enthält" (Hegel, Werke, vol. 18, 46).

Additionally, with the terms “organic/organism” Hegel introduces a logical view of scientific and social systems. The “organic point-of-view” serves as a synonym for what he in other texts calls a “rational point-of-view”. In so developing Kant’s idea, Hegel thus clearly not only views the “idea” – with its great similarities to Kant’s Architectonic - as an organism, but other systems as well: the logic as a philosophical discipline, the philosophy of nature, the philosophy of mind, as well as the state, the sciences of physics, organics, etc. In fact, any system with its principles grounded in reason is considered an organic one.

Hegel thus applies the concept of the organism much more broadly than Kant: indeed, it is found in virtually every part of his work. Because of this, and because it is contrasted with the mechanism concept and the mechanistic point-of-view, in this work I must consider various areas of Hegel’s philosophy and the history of nineteenth-century thought (the logic, the philosophy of nature, the philosophy of mind).[4] It is thus a somewhat interdisciplinary theme and represents an attempt to

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Like Schelling, Hegel views the sciences as unified. Once again, following Kant, he also views the natural sciences as rooted in a priori principles. Each scientific discipline has a "pure" aspect. Reason supplies its principles, not disregarding the empirical content, but providing a structure through which to organize and interpret it. Because reason provides this structure and does not contradict itself, the sciences can be unified. At the same time, however, in Hegel the diverse viewpoints and sciences retain their own worth as integral moments of the system.

[4] One area in which Hegel applies the organism concept that I am not able to explore in depth here is his political writings. Corresponding to Hegel's use of the organism concept in this context, he also often applies other descriptions from the natural philosophy in his political explanations, with the same intention. Though I shall not explore this in detail in this work it bears mentioning that in the Grundlinien der Philosophie des Rechts Hegel characterizes the constitution as the ideal state as a "purposeful", "self-determining" "organism" (RP, §258); the state is also the "Organisation einer Welt entfaltendes Geistes" (RP §270) as well as the "Prozeß" of "... organischen Lebens". This serves as the ideal according to which he judges the legitimacy of political rule. The state, according to Hegel, is "organized", an "organic life"; it is "purposeful" and "self-determining" - otherwise it is not a rational institution for communal living.

Seeing Hegel's "organic","holistic" and "reconciled"point-of view in contrast to the "mechanistic","atomistic" and "incomplete" perspective, brings to light one of the most important transitions in the development of the reasoning process according to Hegel. The knowing human subject must first break down the objects of his interest into parts; then these "disconnected" parts must once again be synthesized into a whole. Against this background Hegel's characterization of contract theory as the political application of the atomistic theory from physics and chemistry and his general pejorative use of the term "atomistic" and "atomism" gain their true significance. Just as the atomists in natural philosophy fail to see the "wholes" in nature, so too do the contract theorists fail: they do not see the state as a unity with a natural purpose which serves general interests, but hold it instead for a "coincidental" conglomeration of individuals serving no general purpose. In short, they take the first step in the reasoning process, but fail to take the second one. They do not understand the state to be a moment in the system that ultimately serves thinking. Their theory

follow what Hegel called Montesquieu's "wahrhafte historische Ansicht," and "echte philosophischen Standpunkt"; i.e., it is an attempt to see Hegel's theory in its social, historical embeddedness. As mentioned, specifically, I shall look a the role played by the views in natural philosophy at his time. Interpreting Hegel's view of the organism against this background allows a certain clarity about some detailed issues in his organic theory, like whether he views all objects as organic ones, or whether he views the world as a quasi-mystical, animated whole.

Unfortunately, there is a lack of secondary literature specifically related to this theme. While it commonly enough said that Hegel has an organic view of life, there has not been a lot written to specify exactly what it is. One commonly accepted view, especially in text-book introductions to Hegel, is that he is a quasi-mystical philosopher who espouses an animistic view of the world as a whole. That the notion is in everything – and that the notion is an organism – is correspondingly taken as a declaration of animism: accordingly, every object in the world is viewed as an organism. The interpretation I offer here counters this view. Hegel is not embracing mysticism, but is sorting out his problematic in the post-Kantian context. In viewing the world and various systems as organic he thus does not propose that they are animated, but that the have the same organizational structure as organic things in nature.

One of the things this mystical view of Hegel overlooks is his great respect for the natural sciences – and not just the life sciences. In texts dealing with the sciences it seems quite clear that Hegel does not view all things as somehow mystically alive, but – quite to the contrary – that he thinks that viewing them as such would obscure the truth about many of them. The organic point of view is not the only one; and the others retain their fields of validity.

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represents the political application of the atomistic worldview, and thus does not rise above the understanding. In contrast to the atomists, rational subjects integrate the parts of every system into a "self-determining" and "purposeful" whole ultimately oriented towards thinking.

Another related issue regarding Hegel's conception of the organism concerns whether he views all objects as then having an organic structure, or only some of them. Rolf Peter Horstmann, while not by any means accepting a quasi-mystical reading of Hegel, still argues that Hegel in the last analysis views all objects as organism-like. I also counter this view here, arguing that Hegel does not do so, but sees some objects as mechanical or chemical. Only those objects with necessarily integrated parts, where each part serves the whole, and the whole serves the parts, are organic. In both his logic and his natural philosophy, however, he maintains that not all objects are such developed substances. Indeed, Hegel's expectation that philosophy not contradict the natural sciences itself makes it unlikely that he would argue that the biological perspective should be applied to all of them.

While I argue against Horstmann on this issue, in general I find his discussion of the background of the organic problematic one of the most enlightening.[5] He especially succeeds in illuminating the philosophical context of Hegel's work in this area, showing how it is related to other post-Kantians' attempts to widen the realm of reason, among other things, to make room for an adequate understanding of the life sciences. This issue is also treated well in Robert Pippin's Hegelianism as Modernism and in Hösle's Hegels System. Hösle's book offers one of the most thorough discussions of the organic problematic as a whole. He very aptly shows the problematic in relationship to the concerns of transcendental philosophy of science. Additionally, he offers a detailed analysis of some of the main issues that played a role in deciding whether or not to include the organism concept in the logic; and he presents a critical discussion of later Hegel interpreters on this issue. Hösle's account treats many of the issues dealt with here, but because his concern is to elucidate Hegel's entire system, he does not provide the sort of detailed discussion of the context of the life sciences I offer here. While his treatment and the others mentioned here help to enlighten the background of Hegel's concerns, they fail to offer a close detailed analysis of Hegel's biological views against this backdrop or to explore the issue in relation to a wide array of Hegel's texts. The

[5] Rolf-Peter Horstmann, Die Grenzen der Vernunft; also his Ontologie und Relationen.

same is true of other treatments of Hegel's "logical" view of the organic such as Findley's "Hegelian Treatment of Biology and Life",[6] or Düsing's "Naturteleologie und Metaphysik bei Kant und Hegel".[7] Düsing may be correct to say of Hegel, "er sieht in der inneren Zweckmäßigkeit vielmehr wesentlich die Immanenz des Begriffs als des Telos im organischen Naturwesen";[8] but this should not lead us to miss the influence of the natural sciences on his thought about what the organic idea is.

There are a few works that do treat the concrete biological issues, but they tend to ignore Hegel's broader, non-biological use of the organism concept. This is the case with Olaf Breidbach's study of Hegel's organic perspective, which does situate Hegel's ideas in the context of the nineteenth-century life sciences.[9] This is also the case with Petry's endnotes to Hegel's Naturphilosophie.[10] While both of these studies demonstrate very important connections to the literature on natural philosophy, that is their sole intention. In this study, however, I point towards both the biological and logical uses of the organism concept. Hegel thought he needed to place the organism concept in his logic to secure the organics a place among the exact sciences. So looking at the concept in the context of the logic is essential. Yet seeing how its application parallels the early-nineteenth century organics is also essential for a thorough historical understanding of Hegel's perspective. In looking at both of these areas, this work attempts to incorporate elements of earlier works, but it aims to be broader in scope. I offer a view of how Hegel's philosophy of the organism plays out against the concerns of the transcendental natural philosophy and empirical research in the life sciences. The uniqueness of this work thus lies in the depth and breadth of the treatment of Hegel's view of the organism. While other works have treated the view of the organism explicated in his logic, or in his biological works, to my knowledge none have thoroughly examined his view in its systematic use;

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[6] J.N. Findley, -In: Hegel und die Naturwissenschaften. ed. M.J. Petry.
[7] Klaus Düsing, -In: Hegel und die 'Kritik der Urteilskraft'. ed. H. Fulda and R.P. Horstmann.
[8] Düsing, 150.
[9] Olaf Breidbach, Das Organische in Hegels Denken: Studie zur Naturphilosophie und Biologie um 1800.

nor have their been many attempts to situate the development of Hegel's thought in reference to the biological views of his day.

The view inspiring this work is that seeing Hegel's relationship to the natural sciences can do much to enlighten his philosophy as a whole, for given his view that the sciences and philosophy must compliment one another, a major concern of his was to find a rightful place for the life sciences in transcendental philosophy. Hegel's view of the organism can be best understood against this background. Hegel even goes so far as to say that philosophy thanks the empirical sciences its own development. Since this is his viewpoint, it seems particularly unfortunate that his natural philosophy has been so neglected and that many would now think of this as a rather queer statement, coming from him. This might serve as an indicia of how deeply his thought is misunderstood. Given Hegel's factual attempts to integrate the natural sciences into his theory, it seems only right to look into his own views of science – perhaps even for hints of ideas that may have been impulses for his own development; and given that his thought practically epitomizes the "organic" philosophical outlook, it seems that his philosophy of life is especially deserving of attention.

A few words about method ought to make the text an easier read. I explicate Hegel's views here on the hand of key texts in which he develops his concept and describes systems as organic. I attempt to highlight Hegel's relationship to Kant in the development of his logical view of the organism. In examining Hegel's application of the concept I explicate some of the general characteristics of these organic systems. Finally, I look at some of the ways Hegel's system reflects the scientific views of his day and at some of the ways it escaped them, or perhaps better put, at some of the general points that the science of that day shares with the science of ours.

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[10] M. J. Petry, Hegel's Philosophy of Nature (trans. with endnotes).

In chapter one I shall examine Hegel's use of the organism concept in the Encyclopedia version of the philosophy of mind as well as the disciplines of logic and the history of philosophy. Using these systems as examples I shall show what I have been maintaining here; i.e., that Hegel characterizes not only them, but all scientific systems as organic. I shall briefly examine some of these systems and show what makes them organic. In this context I shall also examine the similarities between Hegel's and Kant's views of systems, showing that both think scientific systems need an apriori, philosophical moment. Showing this should make clear one of the reasons Hegel is motivated to include teleology and the organism concept in the logic. Securing a place for them there it would certainly be easier to show the apriori moment of the life sciences.

Chapter two then looks at the context in which Hegel does add teleology and the organism concept to the logic. It deals with Hegel's view of the various sorts of objects outlined in the section of the logic entitled "Objectivity". While Hegel maintains that the object comprising all objects, the so-called "set of all sets", is an organic unity, he does not, for that, think that all objects in this set are organic. Instead, he thinks that there are three ways that we grasp objects in the world and three corresponding sorts of objects: a mechanical, chemical and teleological (or organic) perspective and objects corresponding to each perspective. Given that each of these perspectives is in the logic, the apriori element of each of the corresponding sciences should be easier to demonstrate. I argue that Hegel does not collapse these perspectives into a biological one, but that each of them maintains its importance. On the basis of this explication I shall also argue that it is clear that Hegel's usage of the organic terminology in various parts of his system is not merely metaphoric, but is a consistent application of the concept Hegel fully develops in the logic. Hegel is not an empiricist who looks at plants and animals, then argues on the hand of an analogy that states and scientific systems are merely a lot like these; instead, he is a logician who offers a conceptual framework which he then applies to diverse objects. The realized state, scientific systems and animals are all examples of organic objects.

Chapter three offers a more explicit examination of Hegel's view of the organism as outlined in the section of the "Logic of the Notion" entitled "Life"; it especially concentrates on the subsection, "The Living Being", in which Hegel offers an improved explication of Kant's definition of organic objects. Objects with the "concept" as their "substance" are there said to be fully purposive, with all their parts serving as means and ends for the whole. His explication of the "idea" as an organism can best be seen as an appropriation of Kant's view that the Architectonic of reason is an organic whole. However, he further determines this view, also incorporating influences from Aristotle: for Hegel as for Aristotle the idea, soul or nous has a passive and active aspect. When thought, the idea, which otherwise exists in a mere passive state, is realized. As realized it can then be understood as a soul united with a body – yet another organic image. Perhaps even more important for the purposes here, however, Hegel also indicates that the organic idea has three processes: shape, assimilation and reproduction, three processes also found in his characterization of organism in nature, and which were also widely discussed in the natural scientific literature of Hegel's time.

Chapter four includes an examination of Hegel's use of that natural-scientific literature in his natural philosophy. However, this follows a presentation of Hegel's view of the interactive role of philosophy and the natural sciences and a description of his view of the "philosophy of nature" as an organic system. Some of the views developed there are already touched upon in chapter one. However, in this chapter they are portrayed more specifically in relation to the role of his Real Philosophy. The treatment of the natural-scientific literature is then offered in connection with the examination of Hegel's views of the types of organisms that are to be integrated into the natural sciences: the geological, vegetable and animal organisms. His explication of the difference between "mechanical" organic objects (the geological organism) and living organic ones here makes it still clearer that Hegel does not view all organisms as alive in any typical sense. What the geological organism shares with the vegetable and plant organisms is that it has a form determining its internal structural processes, it assimilates from a nature external to it and reproduces itself. In presenting

Hegel's view of the natural organisms I shall show how they reflect the natural scientific developments of his time.

Did Hegel really derive his view from the logic, or did he simply import the ideas that had been gathered empirically into the logic? Or are both perhaps possible? Is this perhaps a case where Hegel imported ideas from one science into another, a case where developments in biology helped lead to improved thinking about logical processes? In short, a case where philosophy thanks the empirical sciences its development? Or did he perhaps less consciously reflect the scientific views of his age? I shall briefly look into these questions. It is, however, important to bear in mind that regardless of the answers, the view he developed has not lost all of its appeal. In the conclusion I summarize Hegel's view, but also show how it anticipates some of the main developments of twentieth-century systems theory. Like Hegel, proponents of classical systems theory also view the general structures of their systems as applying to plants, animals and inorganic systems such as scientific disciplines and the state. For them as for Hegel such organized systems consist of inner structures through which these systems assimilate things external to them, and they reproduce themselves in this process. Having developed their views in a post-Darwinian context, the modern systems views in some ways differ from Hegel's. Yet, for all that, the general views that they offer are already largely developed in Hegel's thought.

CHAPTER ONE

ORGANIC SYSTEMS

Hegel's application of the organism concept lacks a certain clarity because it is at one and the same time used to refer to all rational unities; e.g., to various objects, the systems that they comprise, the "system of systems" (philosophy) and the idea in general. Would it not be clearer to designate one of these as an "organism" and see the rest as its "organs"? Yet, it is a difficulty connected with many characterizations: we also use the terms "unity", "whole", "system" and a whole array of others in ways that entail similar ambiguities. They simply are terms so widely applicable; there are levels of perception at which a thing is a part of another object under question, other-levels at which it is the object itself. So, for example, a chair can be viewed as an object from one level with its legs as parts. From another vantage point, however, the legs themselves are objects. Once it is seen that the "organism" is simply to be understood as one of these types of "unities", the term can be easily recognized to be relative to the field of vision.

In this chapter I shall particularly focus on how Hegel uses the term in reference to scientific systems. One of the main goals of this chapter is to offer textual evidence that Hegel applies his organism concept to various systems, not just to plants and animals, and to show what makes such systems organic. According to Hegel, organic systems are those organized according to principles of reason: the rationally-based, guiding principles of reason at the foundation of any scientific system allow what would otherwise be isolated information to be integrated and organized into a whole. A second important function of this chapter is to show that Hegel has a Kantian view of scientific systems. Like Kant, Hegel thought all scientific systems had an apriori, pure moment. The desire to give the life sciences a fitting place among the natural sciences was certainly an added impulse for including teleology and the organism concept in his logic. Placing it there, it could then be more easily shown that these sciences have an apriori principle.

I shall begin by showing how the history of philosophy as a scientific system is presented as an "organism". This offers a particularly good presentation of the organism concept in Hegel's system because: 1) Hegel's language use in the Vorlesungen zur Geschichte der Philosophie is among the

most assessable in his opus; and 2) on the basis of his discussion there it is particularly clear what Hegel in general takes to comprise the type of scientific system he characterizes as "organic". I shall then show how the very forms of thought grasped in a scientific/organic history of philosophy are also evident in the logic and the philosophy of mind and that these sciences are also organic.

In examining the Philosophy of Mind I shall address a further issue related to Hegel's claim that "Geist" or the Idea as a whole is an organism. On the basis of a theological understanding of Hegel's philosophy it is often maintained that the he equivocates "Geist" with the "Holy Spirit" of the Christian tradition: following this, his view that the "Geist" or idea is an organism is taken to imply a form of panentheism. His view that "'Geist' is in everything" is thus interpreted as a quasi-mystical statement. In the context of elaborating on the goal of the Philosophy of Mind I shall offer an interpretation counter to this, arguing that he means something much more aligned with common sense; namely, that seeing mind in everything means seeing everything in relation to the system of categories employed anytime we think about anything and seeing how human mind has externalized itself in sociocultural institutions.

1.1 THE HISTORY OF PHILOSOPHY: A PARADIGM MODEL OF AN ORGANIC SYSTEM

In Hegel's presentation of the scientific character of the history of philosophy he makes the connection between scientific status and the organic standpoint particularly clear. In doing so he also strongly differentiates between "scientific" research and non-scientific collections and presentations of facts. That making science organic is implicit in this difference; only rationally-based teachings are truly scientific and organic.

Already in the introduction to the Lectures on the History of Philosophy Hegel emphasizes that he views the history of philosophy as an organic, scientific whole of this sort. The divisions of the history of philosophy are necessary periods which "ein organisch fortschreitendes Ganzes als einen vernünftigen Zusammenhang zeigen muß, wodurch allein diese Geschichte selbst die Würde einer Wissenschaft erhält".[11] Hegel's description here of the "organic whole" is clearly to be interpreted as a synonym for the "organism", which is just one type of "whole" or "unit", "substance" or "composition" ("Zusammengesetzten");namely, just the sort described as "developing and organic".

In being demonstrated to be a "rational nexus" or "rational connection", this "organic whole" gains its scientific character; or, in somewhat simpler language, this means that this science must be grounded in reason. The rules of reason organize the facts into a whole, thus establishing a "rational connection" of facts into a system; in this, the system gains its scientific status. This can be contrasted to non-scientific conglomerations of facts.

If we merely have information - for example, that Heraclitus viewed the world as in flux, and Parmenides viewed it as permanent - then we do not yet have a science. We have a mere collection of thoughts and/or opinions, a collection of facts. The information is first able to be viewed as scientific if it is integrated into a rational system. We must show how the facts are integrated into a connected whole: in short, we must show how the facts express reason. To use the above example, it must be shown that Heraclitus and Parmenides both express particular stages in the development of reason - for example, that Heraclitus emphasizes the role of empirical observation in truth, while Parmenides emphasizes the role of reason in it.

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[11] Hegel, VGP, vol. 18, 19. "must show an organic developing whole as a rational nexus; only through this does this history gain the dignity of a science" (trans. DPA).

The history of philosophy only becomes a science under this condition: namely, that it is grasped as "ein System der Entwicklung der Idee".[12] As a science it is an "organic whole" manifesting the "development" of the idea. The "development" spoken of here is modeled on the natural scientific view of development: the discipline develops like a plant; it is self-organized and has an internal purpose ("Zweck").[13] This sort of organic, rational system, showing a scientific character, differs from a mere collection of facts. As Hegel says: "Eine Sammlung von Kenntnissen macht keine Wissenschaft aus. Nur so, als durch die Vernunft begründete Folge der Erscheinungen, welche selbst das, was die Vernunft ist, zu ihrem Inhalte haben und es enthüllen, zeigt sich diese Geschichte selbst als etwas Vernünftiges...."[14]

Hegel's "system of the development of the idea", this "organic whole", is one such scientific system. What makes the history of philosophy scientific is that the various "appearances" of reason (the philosophic viewpoints in this case) are laid bear in their systematic context; i.e., it can be shown that the various historical viewpoints correspond to laws of reason - or perhaps put more poignantly, that they are themselves the theoretical expressions of the law of reason in history. Here, as in other contexts, the facts must be comprehended as a part of a developing, rational whole before they can be viewed as constituting a science.

1.2 THE KANTIAN ORIGIN OF HEGEL'S ORGANIC VIEW OF SCIENCE

Hegel's view of science is largely in agreement with Kant's. Examining Kant's view of science ought to thus throw some light on Hegel's perspective and illuminate the context of their common attempt

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[12] Hegel, VGP, vol. 20, 479. "a system of the development of the idea" (trans. DPA).

[13] Hegel, VGP, vol. 20, 479.

[14] Hegel, VGP, vol. 20, 480. "A collection of facts does not constitute a science. This history is only shown to be rational when shown to be a series of appearances grounded in reason, which themselves have reason as their content and reveal it" (trans. DPA)

to give philosophical foundations to science. One of Kant's clearest expressions of his view of science comes in the preface to the Metaphysische Anfangsgründe der Naturwissenschaft. There he distinguishes natural science from teachings about nature ("Naturlehre"). While teachings about nature contain "systematically ordered facts about natural things", as does science, they differ from true science ("wahre Wissenschaft") in being based merely upon "empirical" principles. Science requires more than merely being systematically ordered; it must also be ordered according to apriori rational principles which demonstrate what nature consists of.[15]

Kant's view of nature must be kept in mind to understand this. Nature is not what we at first think it is; instead, it is itself a rational construction. We do not and cannot know what nature is in-itself, but our rationality offers us an organizational pattern of nature by which we are able to experience the world. In Kant's view, this organizational pattern constitutes nature. Nature is thus a product of our understanding, which organizes the manifold ("das Mannigfaltiges") into units able to be experienced. Natural science is essentially the method for systematically comprehending experience in various areas of life according to apriori, necessary principles of reason. As Kant describes it: "Eine jede Lehre, wenn sie ein System, d.i. ein nach Prinzipien geordnetes Ganze der Erkenntnis sein soll, heißt Wissenschaft...."[16] However, there is a stipulation. Because nature consists of laws arising from reason, natural science must be systematically ordered according to these same laws of reason.

Kant's view of nature as a product of reason makes this quite logical, of course: if nature is constituted by reason, knowledge of nature must also correspond to laws of reason. Empirical principles thus cannot secure the true scientific status of systems. Concretely that meant that the classification theories of natural philosophy at his time as well as pre-Lavoisieran chemistry were

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[15] Kant, Metaphysische Anfangsgründe der Naturwissenschaft, (MaG) Werke, vol. 8, A V.

[16] Kant, MaG, A III. "Every teaching, if it is to be a system, i.e., a totality of facts ordered according to principles, is known as science" (trans. DPA).

not able to be classified as science in the strict sense; nor could the history of philosophy. None of these disciplines ("Lehre") were anchored in laws of reason, so their principles were not necessary.

Although Hegel rejects the difference between regulative and constitutive knowledge employed by Kant, in differentiating between science and non-scientific disciplines Hegel nevertheless retains the difference between science and a non-scientific "collection of knowledge" ("eine Sammlung von Kenntnissen"). Kant's scientific "whole", ordered according to principles (a "nach Prinzipien geordnetes Ganze der Erkenntnis") has strong similarities to Hegel's description of science as appearances grounded in reason ("durch der Vernunft begründete Folge der Erscheinung..."). In maintaining the difference between science and a "collection of knowledge" and indicating that scientific knowledge is grounded in reason, Hegel sets forth the Kantian tradition.

Hegel, however, is more consistent in this point than Kant. In Kant's case, he is sometimes quite careful to deny "teachings" the status of science, while at other times he seems to classify them as sciences after all. In doing so, he draws a distinction between exact, real science ("eigentliche Wissenschaft") and inexact, incomplete sciences ("uneigentliche Wissenschaft"). In the MAG he writes:

> Die Naturwissenschaft würde...entweder eigentlich, oder uneigentlich so genannte Naturwissenschaft sein, wovon die erstere ihren Gegenstand gänzlich nach Prinzipien apriori, die zweite nach Erfahrungsgesetzen behandelt. Eigentliche Wissenschaft kann nur diejenige genannt werden, deren Gewißheit apodiktisch ist; Erkenntnis, die bloß empirische Gewißheit enthalten kann, ist nur uneigentlich so genanntes Wissen. Dasjenige Ganze der Erkenntnis, was systematisch ist, kann schon darum Wissenschaft heißen, und wenn die Verknüpfung der Erkenntnis in diesem System ein Zusammenhang von Gründen und Folgen ist sogar rationale Wissenschaft.[17]

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[17] Kant, MaG, AV. "Natural science would be ... either exact (real) or what is known as inexact (quasi) natural science, of which only the first treats its subject matter entirely according to apriori principles, the latter treating is subject matter according to experiential laws. Only those sciences with apodictic certainty can be rightfully called real sciences; discoveries which can only attain an empirical certainty are merely inexactly referred to as knowledge. Those totalities

The earlier distinction is retained. Only those disciplines, systems, based on rational principles strictly deserve the name of science, but he now claims that disciplines lacking a philosophical basis can be called scientific in a vague sense. Real or exact sciences, in fact, have two sides: on the one hand, a "pure" component, constituting their philosophical dimension; on the other hand, an applied component. The pure side of such a real science consists in showing the principles of reason underlying that science, while the applied side consists in gathering empirical evidence, in filling the categorical framework with material content.[18] While disciplines ("Lehre") do not have this pure component to them, all real sciences do. To make Kant's point quite succinctly: only those disciplines with principles dictated by philosophy are truly scientific.

In the Critique of Pure Reason Kant indicates that the inexact sciences only secure "empirical (mechanistic) knowledge", while the exact sciences, by contrast, reap "mathematical" knowledge, based on "the construction of the concept". The difference being pointed out is the same as found in the MAG: "mathematical knowledge" can supply apodictic necessary sentences, whereas "empirical (mechanistic) knowledge" cannot. So, only mathematical knowledge is truly scientific; mechanistic knowledge remains arbitrary.[19] This is an interesting addition to the MAG mainly because the language use here parallels Hegel's more clearly. Oddly enough, Kant, who is so often viewed as supplying a philosophical justification to the Newtonian "mechanistic" perspective, here says that a "mechanistic" understanding of things is an incomplete one. Mathematical reason, long the paradigm for reason in general, supplies a scientific basis for disciplines. Hegel, like Kant, emphasizes that science must be based on principles of reason, which enable the facts to be organized into a rational, necessary system. For Hegel such scientific knowledge is "organic" and "rational"; and it is to be contrasted with "mechanical" views, which are not organized by rational

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of facts which are systematic can thus be called sciences and if the nexus of knowledge in this system is a connections of reasons and consequences even rational science" (trans. DPA).

[18] Kant, MaG, A VIII.

principles. At least in this Kantian text we find some evidence of the later Hegelian distinction between "mechanical" and "philosophical/organic" knowledge. Here Hegel parallels Kant, as he also does in incorporating the difference between disciplines and sciences in the first place.

Hegel adopted this Kantian differentiation quite early in his life, it being found at least as early as 1802. In an article in the Kritisches Journal der Philosophie he indicates that those engaged in mechanics and physics condemn themselves to the status of fact collectors in failing to incorporate philosophy into their task. Failing to incorporate philosophy they "abandon the claim to being exact sciences and are content to consist of a collection of empirical facts."[20] Like Kant, Hegel thinks that sciences can only be true or complete if they have a philosophical moment, a "pure" aspect to them, in which the metaphysical ideas underlying the science are grounded. If empirical scientists fail to incorporate this philosophical moment, they do not have a solid basis; for whether they like it or not, they do have philosophical concepts at their root. Their question thus should not be: do we have philosophical principles at our basis? But instead: which ones do we use and are they justifiable? Hegel often enough criticizes empirical scientists precisely for their lack of consciousness of this: the "fundamental confusion of scientific empiricism" is that its proponents employ "metaphysical categories of material, force,...one, many, generality, also infinity..." but they do so "in a fully uncritical and unconscious manner."[21] Empirical disciplines remain unscientific until their principles are consciously grounded by philosophy. Only when disciplines are secured at their basis do we have science. Only then do they become rational, scientific, organic systems constituting "die Totalität des Organischen", to quote from Hegel's early writings.[22]

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[19] Kant, KrV, B 179.

[20] Hegel, "Über die wissenschaftlichen Behandlungsarten des Naturrechts, seine Stelle in der praktischen Philosophie und sein Verhältnis zu den positiven Rechtswissenschaften," Werke, vol. 2, 434. "[Sie] auf die Ansprüche, wahrhafte Wissenschaften zu sein, Verzicht tun und sich begnügen aus einer Sammlung empirischer Kenntnisse zu bestehen."

[21] Hegel, Enzyklopädie, §38. Unless otherwise noted all English entries from Encyclopedia, Bk I, are taken from the Wallace trans., Bk. II from Petry's trans. and Bk. III from Wallace's trans.

[22] Hegel, Werke, Vol. 2, 440.

The fact that Hegel thinks this work must be conscious (it not being sufficient that the sciences perhaps work according to correct principles by chance) also certainly explains his continual frustration about empirical scientists, expressed, for example, in his criticism of Newton: "Wann wird die Wissenschaft einmal dahin kommen, über die metaphysischen Kategorien, die sie braucht, ein Bewußtsein zu legen!"[23] Hegel shared Kant's view that knowledge must be secured from the bottom up. If the principles with which we work are not secure, then neither are the results based upon them. This is simply the traditional view that knowledge must be secured at its foundations. Hegel also shared the Enlightenment faith that philosophy was up to the task. It could supply science with its principles and in so doing secure and preserve knowledge. In this way studies become truly scientific. They must be shown to be related to the idea, to be based on or expressions of necessary principles of reason. Insofar as systems are able to do so, they are true, systematic and organic. Philosophy might be considered the heart of all sciences, pumping reason to all of them. Each science constitutes a domain of reason, a part of a system, in the last analysis commensurable with other systems because of sharing in universal reason.

Although Hegel shares much here with Kant, in the final analysis he breaks from Kant because of his differing understanding of reason: for Hegel, reason is dialectic. Precisely for this reason, he also has a different view of science and which disciplines can be considered scientific. His view is a dialectic one in which absolute mind will overcome all the oppositions that constitute the various stages of reason: "In der Einheit den Gegensatz, und in dem Gegensatz die Einheit zu wissen, dies ist das absolute Wissen; und die Wissenschaft ist dies, diese Einheit in ihrer ganzen Entwicklung durch sich selbst zu wissen".[24] On the basis of his dialectic view, Hegel characterizes the history of philosophy as a science, a step that Kant, for example, would not take. We now see that the "organic developing whole" ("organisches fortschreitendes Ganze") showing a "rational nexus" ("vernünftigen

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[23] Hegel, Enzyklopädie, §270. "When will science finally get around to acquiring consciousness of the metaphysical categories that it uses!"

Zusammenhang"), which Hegel earlier described this science to be, is a dialectical unity of opposites, like the logic itself, necessarily ordered as it is. The various philosophical views are thus connected as necessary periods (or moments of development) of the history of philosophy. Just as the powers and actions that stand in opposition to one another must be overcome in the philosophy of mind, and the different moments of reason must be overcome in the logic, so too must differences in philosophical perspective be overcome in the history of philosophy. A discipline working according to principles that allow the integration of such diverse moments is viewed as organic and scientific.

1.3 AN ORGANIC LOGIC

The parallels Hegel points out between the history of philosophy and the logic show that he also views the logic as an example of an organic system. These parallels are presented in particular clarity in sections 13 and 14 of the Encyclopedia and in the Lectures on the History of Philosophy. The title of section A2,c in the lectures shows Hegel views the development of the idea there, as in the logic, as the "development" of the concrete; thus the title heading, "Die Philosophie als Erkenntnis der Entwicklung des Konkreten."[25] In that section of the work Hegel draws the following conclusion: "So ist die Philosophie System in der Entwicklung, so ist es auch die Geschichte der Philosophie, und dies ist der Hauptpunkt, der Grundbegriff, den diese Abhandlung dieser Geschichte darstellen wird."[26] Clearly, the similarities in structure between philosophy and its history are not coincidental. On the contrary, it is essential to perceive their agreement in order to understand the history of philosophy scientifically. In fact, each level in the history of philosophy will show agreement with the formal levels of thought. Here too, Hegel describes philosophy in general, and not merely its

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[24] Hegel, VGP, vol. 18, 460. "To acknowledge the unity of difference and the difference in unity – this is absolute knowledge; and the science is this – to acknowledge the unity in its total self-development" (trans. DPA).
[25] cp. Hegel, Enzyklopädie, §13.
[26] Hegel, VGP, vol. 18, 47. "The development of the system of philosophy is the same as in the history of philosophy, and this is the main point, the basic concept that this treatment of this history will display" (trans. DPA)

history, as an “organisches System”, which “einen Reichtum von Stufen und Momenten in sich enthält.”[27] Further, Hegel describes it as a “living individual”:

> So ist die gebildete Philosophie in ihr selber beschaffen; es ist eine Idee im Ganzen und in allen ihren Gliedern, wie in einem lebendigen Individuum, ein Leben, ein Puls durch alle Glieder schlägt. Alle in ihr hervortretenden Teile und die Systematisation derselben geht aus der einen Idee hervor: alle diese Besonderen sind nur Spiegel und Abbilder dieser einen Lebendigkeit; sie haben ihre Wirklichkeit nur in dieser Einheit, und ihre Unterschiede, ihre verschiedenen Bestimmtheiten zusammen sind selbst nur der Ausdruck und die in der Idee enthaltene Form.[28]

The “object” here being viewed in its developed form as the “living individual” is the abstract idea as a whole, which contains differences within it. It has a “pulse” beating through all its “members”. That applies to the idea in philosophy in general and in the expressions of it in the history of that discipline. In both forms it is very clearly portrayed as an organic whole.

The overarching similarities between these two disciplines are thematized time and again. So too, it is claimed that their developmental levels are the same, based as they are in the development of the idea: “die Aufeinanderfolge der Systeme der Philosophie der Geschichte dieselbe ist als die Aufeinanderfolge in der logischen Ableitung der Begriffsbestimmungen der Idee.[29] This idea is found in various texts: “Dieselbe Entwicklung des Denkens, welche in der Geschichte der Philosophie

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[27] Hegel, VGP, vol. 18, 46,47. an "organic system" ... which "contains a wealth of levels or moments within it" (trans. DPA).

[28] Hegel, VGP, vol. 18, 47. "So the developed philosophy is constituted in itself; it is an idea as a whole, and in all its members, as in a living individual, a life, a pulse that beats through all the members. All of the parts which arise in it and its systematization emerge from an idea: all of these particulars are only a mirror and image of this one life; they only have reality in this unity, and their differences, the various determinations taken together, are only the expression and the form contained in the idea" (trans. DPA).

[29] Hegel, VGP, vol. 18, 49. "The order of the system of the philosophy of history is the same as the order in the logical departmentalization of the conceptual determinations of the idea" (trans. DPA).

dargestellt wird, wird in der Philosophie selbst dargestellt, aber befreit von jener geschichtlichen Äußerlichkeit, rein im Elemente des Denkens."[30]

The long and short of it is that the history of philosophy and the logic, as expressions of the idea, both follow the same patterns of development. So too, different philosophies express different aspects of the idea. Yet, even despite their differences, from a fully comprehensive point-of-view they can be seen to form a whole.

In the Encyclopedia Hegel thematizes the unity with difference of the structure of philosophy in three different analogies (one using an organic image). First, in the history of thought, the different philosophies are like branches of a single tree, expressing both difference and unity. Viewed as branches they differ from one another. Yet they are only branches in essence when connected to the tree. Second, philosophy is compared to various sorts of fruit (e.g., grapes, cherries and pears), which are still all fruit, despite their differences. Different philosophies are simply sub-categories of philosophy in general, in essence different varieties of the same thing. The third example also emphasizes this essentialist thought. Here thought is compared to light and obscurity (Finsternis); just as light and obscurity can be grasped as opposing appearances of light, so too can various philosophies be understood as opposing appearances of thought.

Hegel clearly views philosophy as a whole composed of many parts. He also uses vocabulary showing the organic character of this whole, speaking of it as "developing" from "potencia" to "actus", towards its end ("Zweck") - as of course organic objects do.[31] Additionally, he uses many terms described in his explication of the organism concept, referring to the discipline of the logic as a "totality", a "unity", a "whole" a "system", an "ordering" ("Ordnung"); and an organism is nothing

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[30] Hegel, Enzyklopädie, §14. "The same development of thought shown in the History of Philosophy is also shown in Philosophy itself, but freed from all historical externality, pure in the element of thinking" (trans. DPA).
[31] Hegel, Enzyklopädie, §6.

other than such a whole, developing towards its implicit end ("Endzweck"). This, together with the citations from the Lectures on the History of Philosophy show that Hegel understands the system of the logic, as well as that of the history of philosophy, to be an organic whole. The organic characterization is always in the background of the explication of these disciplines. As wholes, ordered on principles of reason, they are organic and scientific.

1.4 DIFFERENCES BETWEEN THE HISTORY OF PHILOSOPHY AND THE LOGIC – AN EXCURSUS

Despite the similarities of these disciplines, they are not entirely the same. Shortly examining the differences between the two fields should also help see the essential characteristics that make them organic and scientific systems. Hegel views the two fields as having different tasks: the task of the logic is to demonstrate the necessary development of the categories, whereas the task of the history of philosophy is to show the development and expression of these categories in their empirical form in the history of the philosophic discipline.[32]

There is, however, a complex feedback process between the disciplines. On the one hand, reality ("Wirklichkeit") or truth is shown and preserved ("zeigt und bewährt") in the history of philosophy. This in turn allows the development of the various disciplines of philosophy, including the development of logic. On the other hand, the discipline of the history of philosophy requires knowledge of logic in order to become scientific. It is only possible for us to scientifically approach the study of the history of philosophy (recognizing which of its stages are necessary) when we have perceived which forms of thought are necessary (a task achieved in the logic).[33]

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[32] Hegel, VGP, vol. 18, 48.
[33] Hegel, VGP, vol. 18, 48.

It will be helpful to expand on this point a bit. Regarding the first part of this feedback process, Hegel's main point is as follows: we do not think in a vacuum, isolated from the world and the thoughts of others; instead, we always think at a particular place and time, and our thinking is influenced both by those having lived before us and by our contemporaries. The results of earlier philosophers and scientists (their successes and failures) are available to us; and these results as well as the material conditions strongly affect our ability to even perceive the truth. Because these views build upon one another, Hegel argues that the latest views ("das Resultat aller vorhergehenden Philosophien") have the potential to be the most developed ("die entfalteteste, reichste und konkreteste").[34] In reference to logic, for example, the possibility for clear thinking in that area is dependent upon the entire history of the discipline. Without the developments in that discipline, the advances Hegel thinks possible in "pure logic" at his time would not have been possible. So the cultural development of thought - a part of the linear history - allows us to adequately grasp the transhistorical categories of mind - a part of our circular "pre-history".

Two different issues are perceptible here, although Hegel does not keep them clearly enough distinct. On the one hand, we have the developments within the history of philosophy themselves, which exercise force in philosophy somewhat independent of their assimilation by historical philosophers. (There is clearly a difference between these developments and the study of them, which can and does overlook certain trends that exercised importance.) On the other hand, we have the discipline of the history of philosophy, which is concerned with gaining clarity about what those developments have been; i.e., the study of the developments. The latter aims at getting the facts about the former right. Engaging in the an analysis of the history of philosophy can allow us to gain clarity about philosophical issues, avoid some mistakes we might otherwise make, etc.

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[34] Hegel, Enzyklopädie, §13.

The second point of the feedback process is related to the discipline of the history of philosophy as a science, not so much the actual history of the discipline. Hegel argues that an adequate knowledge of logic is necessary in order for the discipline of the history of philosophy to be carried out scientifically. Only knowledge of pure logic allows us to see the necessity of forms of thought in their historical development. As Hegel writes, "der Beobachter den Begriff der Sache schon mitbringen muß, um ihn in ihrer Erscheinung [in der Geschichte der Philosophie] zu sehen...".[35] Indeed, the history of philosophy - as a discipline in the humanities curriculum - so often seems to be no more than a conglomeration of differing ideas, because its actual history is not seen to be reflecting the categories. Hegel speaks of the "lack of philosophical mind" ("der Mangel des philosophischen Geistes") often evident in such historical studies; and to overcome this lack we must first know how the concept develops in-itself. As Hegel indicates, we cannot present rational thought in its historical development unless we first know what rational thought is.[36]

There are then clear differences between the disciplines of logic and the history of philosophy. What is overlapping in them, making them both organic, is that rational thought orders their respective subject matters into a system. Both are based upon apriori necessary rules of thought: one shows the rules in their apriori logical form, the other in their empirical, historically-expressed form as the history of the idea.

1.5 THE SENSE-OF-SELF IN THE PHILOSOPHY OF MIND

I shall next turn to the philosophy of mind, which constitutes yet another example of such an organic system. Hegel treats mind as a developing whole and argues that the self-knowledge striven for in the Philosophy of Mind requires seeing mind's own development and the expression of its

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[35] Hegel, VGP, vol. 18, 50. "[T]he observer has to bring the concept of the stuff with him in order to see its appearance [in the history of philosophy]."

formal features in external nature. Early in the Encyclopedia treatment of the Philosophy of Mind Hegel writes explicitly of the "living unity of the mind" ("die lebendige Einheit des Geistes"), indicating some of the pre-established directions of its development: "Das Selbstgefühl von der lebendigen Einheit des Geistes setzt sich von selbst gegen die Zersplitterung desselben in die verschiedenen, gegeneinander selbständig vorgestellten Vermögen, Kräfte oder, was auf dasselbe hinauskommt, ebenso vorgestellten Tätigkeiten."[37]

To understand the character of the developmental directions indicated for this system when Hegel speaks of "das Selbstgefühl der lebendigen Einheit des Geistes", it will be helpful to take a short excursus into Hegel's Philosophy of Nature, where Hegel first speaks of the self-awareness or the sense-of-self ("Selbstgefühl"). This sense-of-self is one of the characteristics separating animal organisms from plants.[38] Basically it is defined as a feeling that one's senses belong to oneself, that they are one's own. It is the sense-of-oneself as a carrier of senses and feelings; through this sense the animal gains a feeling of itself as a sense-bearing being that can assimilate external objects. [39] Understanding Hegel's view of this in the natural philosophy it shall then be clearer that Hegel views this as indicating the patterns of development of mind.

In his classification scheme Hegel follows Lamarck, ordering different families according to how developed their faculties of sense are.[40] The more developed these faculties, the higher is the species. Organic families are then divided into three main groupings according to general faculties of sense: plants lack all sense-of-self and demonstrate only a primitive sensibility in reacting to the sun in their movement. Animals have higher powers of sensibility, some even having a vague sense of themselves

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[36] Hegel, VGP, vol. 18, 50.

[37] Hegel, Enzyklopädie, §379. "The self, in that it is aware of the living unity of spirit, is itself opposed to its being split up into what are presented as different and mutually independent faculties, powers, or what amounts to the same thing, activities."

[38] Hegel, Enzyklopädie, §344, add.

[39] Hegel, Enzyklopädie, §357.

as the possessors of senses ("Selbstgefühl"); additionally, as they react to their senses they can also freely move about. Humans have these senses, the ability for free self-movement, plus self-consciousness. The "self-consciousness" ("Selbstbewußtsein") possessed by humans differs from the "sense-of-self" ("Selbstgefühl") possessed by animals in being more clearly defined, or conceptual.[41] But humans have both the lower and the higher faculties.

Hegel regards the sensations as the defining characteristic of animals.[42] Existing as a self-sensing being, itself different from that which it assimilates, the animal-self attains what Hegel calls "ideality" ("Idealität"), and its relates "theoretically" to all things outside of itself.[43] Its activity is not forced in as extreme a manner as that of a plant, which has no freedom of motion. It has taken some steps towards freedom - to use a pun -, having freedom of movement. The relationship between the animal-subject and the external object is one in which the animal assimilates the object and modifies itself in this assimilation, but in which no particular object must be assimilated; i.e., it can roam about eating any of various individual plant or animals, etc. So, the animal has a primitive "theoretical" and "free" relationship to nature. Yet only in humans does this relationship become fully free and theoretical, the human relationship to nature being influenced by the sense-of-self as well as by self-consciousness ("Selbstbewüßtsein").

Although the sense-of-self is present in lower animals and humans, humans unify higher-power faculties of sense than any of the animals. Humans unite all five senses present in the animals (see chapter four); but in humans the sense-of-self is also set against the breaking up of the various human "powers", "abilities" or "imagined actions" ("vorgestellten Tätigkeiten"). These powers and actions are imagined to be independent of one another, but in fact they are all unified in the self. So, just as

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[40] See Hegel, Enzyklopädie, §368, add., 509 ff. Lamarck, Philosophie zoologique, Paris, 1809.
[41] Hegel, Phänomenologie des Geistes, 177
[42] Hegel, Enzyklopädie, §351, add.
[43] Hegel, Enzyklopädie, §381, add; §351, add.

the "sense of self" in animals allows them to feel a sort of unity of their powers of sensation, our sense-of-self ("das Selbstgefühl der lebendigen Einheit des Geistes") sets itself against this illusory separation of our powers and activities. But in our case it sets itself against separations of other sorts as well, for included among these powers and activities are antagonistic views of things from the viewpoint of reason. Hegel specifically mentions the Kantian paralogism of freedom and determinism, but implies that other contradictions from the perspective of rationality would also be included, speaking in plural of "Gegensätze". These contradictions lead to a need to transcend the merely rational perspective and to grasp ideas with reason, thereby unifying them. So the human sense of self, like the animal sense of self, supplies a sense of unity. This partially determines that mind develop in such a manner that this unity become conscious.

In fact, this points to one of mind's main tasks - namely, to unify the all of the apparently distinct powers and activities (including all the contraries or contradictions of the rational perspective) that mind feels to be a part of itself, in the end then even seeing itself in everything. In attaining this task, mind itself becomes living, organic and systematic; and in learning this, the philosophy of mind assumes its living, organic, systematic and true character:

> Die ganze Entwicklung des Geistes ist nichts anders als sein Sichselbsterheben zu seiner Wahrheit, und die sogenannten Seelenkräfte haben keinen anderen Sinn als den, die Stufen dieser Erhebung zu sein. Durch diese Selbstunterscheidung, durch dies Sichumgestalten und durch die Zurückführung seiner Unterschiede zur Einheit seines Begriffs ist der Geist, wie ein Wahres, so ein Lebendiges, Organisches, Systematisches, und nur durch das Erkennen dieser seiner Natur ist die Wissenschaft vom Geist gleichfalls wahr, lebendig, organisch, systematisch...[44]

[44] Hegel, Enzyklopädie §379, add. "The whole development of spirit is nothing but its raising itself into its truth, and it is only as the stages of this that the so-called psychic powers have any significance. It is through this differentiation and transfiguration of itself, and by the leading back of its differences into its Notion, that spirit has truth, and is living, organic, systematic..."

When mind correctly sees what it is, then it sees all its distinctions as mere moments. It unifies them it itself, in principle seeing itself in everything. In attaining this goal, it makes itself organic and living. If, on the other hand, the distinctions are not so unified, then mind is "killed."[45]

Only when the science of mind is organic is it also true and lively; so too, only then is it systematic. These words are often used almost synonymously - or they are at least shown to be necessary conditions of one another. Only when a science is organic and systematic is it true; or vice versa, only when it is systematic and true is it organic. To have any one of these characteristics the science must have them all. Hegel sees the "science of mind" as an organic system, just as he does the sciences of logic and of the history of philosophy. The "development" of the science of mind leads, in the last analysis, to the "end" ("Zweck") of self-knowledge (its unifying and guiding principle) and to "truth". In this process the science shows itself to be "lively". The characterization of the "living unity of mind" offered in the Philosophy of Mind thus quite clearly shows that Hegel understands this type of unity to be one type of organism - a scientific organic system.

In essence this implies what Hegel later says explicitly; namel, that humans – and the discipline of the philosophy of mind – have the Apollonian command, "Know Thyself!", as their goal. In order to reach this end, Hegel argues that we must once again "introduce the concept into knowledge of mind".[46] Hegel sets about doing this in the Encyclopedia version of the Philosophy of Mind, examining the various human powers and the contradictions that arise while employing them, then showing how they are united. When the contradictions are comprehended, they will also be unified; and in this process "absolute knowledge", as Hegel understands it, shall be attained.

I shall now explicate more specifically the task of the Philosophy of Mind and show how the knowledge Hegel seeks there requires bridges to his entire system. Hegel maintains that the self-

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[45] Hegel, Enzyklopädie, §379.

knowledge striven for in the philosophy of mind requires knowledge of how mind penetrates all levels of his system; thus, in explicating the goal of the philosophy of mind I shall be able to show how Hegel views this discipline as fitting into the entire system of the idea, which he also understands as an organism.

The rather detailed interpretation presented in the next section might seem to deter from the main task of this chapter of showing that Hegel broadly applies the organism concept. I have already offered enough textual evidence to show that. Nevertheless, the matter at hand warrants our attention because of the importance of Hegel's view of "Geist". "Geist" is an organism; but what "Geist" is, is a highly controversial matter. A common interpretation of the "right" Hegelians is that Hegel basically identifies "Geist" with the God of the Christian tradition; correspondingly, in arguing that "Geist" is an organism, he is thought to basically reiterate a panentheistic perspective. The interpretation that I offer here means to counter this view. What Hegel means by "Geist" is not so close to what the Christians mean by the "Holy Spirit" as it is to what Humeans mean by mind. In claiming then that the idea or "Geist" is in everything he is thus not making a mystical claim, but claiming that the perceiver and knower is inseparable from the stuff of his or her experience. In the human experience of the world the categories always play a role. Our perceptions and construction of experience is only possible because of the human abilities and categories.

1.6 KNOW THYSELF!

At the beginning of the Encyclopedia version of the Philosophy of Mind Hegel claims that the challenge of the Delphic Apollo to "Know thyself" is both the goal of mind as well as this part of his philosophy. The command is then explained to require that we gain knowledge of mind: "dies absolute Gebot hat...die Bedeutung der Erkenntnis des Wahrhaften des Menschen wie des

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[46] Hegel, Enzyklopädie, §378.

Wahrhaften an und für sich, - des Wesens selbst als Geistes."[47] With this Hegel essentially rephrases the command: "Know thyself!" now means "know mind!" for the essence of self and all essences are tied up with the human mind. So understood, self-knowledge is shown to be connected with truth in general, "the true in-and-for itself". Not only the essence of the self, but the essence of everything, is tied up with knowledge of mind.[48]

Hegel recognizes a human component in all thought and thinks that all disciplines only gain solid foundations when this human, philosophical element of thought is known. This – as the basis of both Kant's and Hegel's view that all science has an apriori human element – is in fundamental agreement with the view of Hume that the objectivity of all knowledge is dependent upon the science of man. As Hume said, "even mathematics, natural philosophy, and natural religion, are in some ways dependent on the science of man; since they lie under the cognizance of men, and are judged by their powers and faculties."[49] Hegel, though, is not lead to Hume's skeptical conclusions. The metaphysical foundations necessary to secure science can be shown to be objective. Those disciplines with this philosophical basis, showing them to reflect the idea, can rightly be considered scientific.[50] As Hegel says regarding the philosophy of mind, "Die Betrachtung des Geistes ist nur dann in Wahrheit philosophisch, wenn sie den Begriff desselben in seiner lebendigen Entwicklung und Verwirklichung erkennt, d.h. eben, wenn sie den Geist als ein Abbild der Natur der ewigen Idee

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[47] Hegel, Enzyklopädie, § 377. The entire quote is: "Know thyself, this absolute commandment, is not concerned with a mere self-knowledge, with the particular abilities, character, inclinations and foibles of the individual, but in its intrinsic import, as in the historical contexts in which it has been formulated, is concerned with cognition of human truth, with that which is true in and for itself, - with essence itself as spirit."

[48] For a lucid account of some of the psychological elements involved in self-knowledge see Burbidge, On Hegel's Logic. Fragments of a Commentary, 19.

[49] Quoted in John Passmore, Hume's Intentions (London, Duckworth & Co. Ltd, 1980) 13. From David Hume, Treatise of Human Nature, xx.

[50] It is not enough that sciences yield practical results or deduce results coherently on the basis given. So usefulness is not the key to objectivity. Being based in reason is. For one of Hegel's more readable comments about the usefulness of philosophy and the lack thereof see his: "Konzept der Rede beim Antritt des philosophischen Lehramtes an der Universität Berlin", in Werke, vol. 10, 411-13.

begreift."[51] The philosophy of mind will attain this scientific (philosophic) character with the attainment of self-knowledge: and because self-knowledge is identified with knowledge of mind, and this in turn is held to be an image of the eternal idea, self-knowledgelies at the basis of all knowledge.

Self-knowledge for Hegel is thus hugely encompassing, and science - indeed all knowledge - rises or falls with it. It does not primarily consist of knowledge of personal psychological factors (such as our weaknesses, individual abilities or other such characteristics), which Hegel views as constituting a truly "trivial" form of self-knowledge; instead, it consists of knowledge of the general human capacities for thought shown in the philosophy of mind and "universal" categories of thought (the idea as expressed in the logic) that all humans share.[52] Knowledge of these universals allows us to see the self in all of our actions ("Tätigkeiten");[53] in fact, once we recognize the role of these categories in all that we think we will see ourselves "in everything in heaven and on earth" .[54]

Given Hegel's view that the "true" self is constituted by our universal characteristics of thought, epistemology constitutes the most important part of subjective psychology; but that must also move beyond itself to a teaching of the categories. Knowing our general mental capacities and the universal categories we will be able to see the active role of the determinations of our thought in the knowing process and in experience in general. In contrast to knowledge of psychoanalysis (which does not penetrate to "mind itself"), a category teaching allows us to see how we shape the world and how

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[51] Hegel, Enzyklopädie, §377, add. "The consideration of spirit is only truly philosophical when it recognizes the living development and actualization of the Notion of spirit, that is to say when it comprehends spirit as a likeness of the eternal Idea."

[52] Hegel, Enzyklopädie, §377.

[53] The word "action" ("Tätigkeit") is not merely identified with bodily activity, but very often with thinking. Indeed, bodily activity is even seen to be rooted in will, which, according to Hegel, is practical thinking. See Hegel, Rechtsphilosophie, §21; Enzyklopädie, §20.

[54] Hegel, Enzyklopädie, §397, add. ("...in allem, was im Himmel und auf Erden ist ") My interpretation here is in the tradition of the "left Hegelians". Croce may be on to something, however, when he says that both the left and right Hegelians attach themselves to different moments of Hegel's thought. Both moments, in his view, are founded upon contradictory doctrines in his thought, and it is impossible to decide which of these schools represents the "true" Hegel. See What is Living and What is Dead in Hegel's Philosophy, 202 ff.

the human mind is to be found in everything. And these determinations are universal, not particular.[55]

The background question informing both Hegel's and many modern interests in this sort of subjective psychology is the following: are human identity, certain cognitive abilities and the categories of thought merely a conglomerate of coincidental habits of mind, perhaps a mere coincidence of history - with no biological or rational basis? Or are some aspects of identity transhistorical and some characteristics and abilities rooted in the human species, forming a general psychology that determines the parameters of possible thought and perhaps even generalizable human goals?[56] A lot turns on turns on this. Indeed, Hegel seems to have thought commensurability of worldviews, solidarity of action - reason itself - to be dependent upon it.

It is fruitful to read Hegel's discussion here against the backdrop of Kant's critique of Hume. While Hume aimed at an objective science of man, in the end he was lead to skepticism. Kant thought, however, that with a teaching of the categories he could overcome Hume's skepticism and provide foundations for the sciences.[57] He viewed the first Critique as the tribunal which would ground reason, and thought that this in turn would ultimately be used to give a foundation the exact sciences.[58] Hegel largely follows suit here: he too thinks all sciences presuppose a metaphysic - in the form of a teaching of the categories. That is exactly the sensitivity demonstrated in this opening paragraph of the Encyclopedia version of the philosophy of mind. Hegel seems to clearly recognize

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[55] Hegel, Enzyklopädie, §377; PdG, 26-7, 82, 152.

[56] The widespread attempt – especially among the sociological minded – to avoid all characterization of a human nature and to thus place the stable features of rationality in language, which historically develops, may only side-steps some difficulties. After all, language ability is finally rooted in our nature; and the languages which the human mind gives rise to either show universal regularities, or they do not. A good case can be made that the regularities in language, or the lack of them, has to do both with the nature of our minds and the nature of the world in which mind has adapted as an evolutionary tool.

[57] In his Metaphysische Anfangsgründe der Naturwissenschaft it is particularly clear that Kant sees the possibility of grounding all sciences in reason. See Kant, Metaphysische Anfangsgründe der Naturwissenschaft, in Werke, vol. 8, AVII.

[58] Immanuel Kant, Kritik der rein Vernunft, Axi-xii.

just how this is connected with a view of the self. Knowledge of mind, including knowledge of the category teaching, thus assumes the place of Kant's tribunal.

That Hegel couches the discussion here in terms of the philosophy of self reveals one interesting dynamic of his Hume and Kant reception. He touches upon both thinkers in summarizing one of Kant's fundamental contributions to philosophy: "Der allgemeine Sinn der kantischen Philosophie ist der, daß sich solche Bestimmungen wie die Allgemeinheit und Notwendigkeit nicht in der Wahrnehmung finden, sie Hume gezeigt hat; Sie haben eine andere Quelle als das Wahrnehmen, und diese Quelle ist das Subjekt, Ich in meinem Selbstbewußtsein."[59] Both Hume and Kant recognize the role of the human subject in the knowing process, e.g., that perception in itself carries neither a connection of ideas nor categorical structures with it, but that these general features of experience are based in the human subject. Despite seeing this, however, both misconstrue what reason and the self are. Hume fails to see the stability of our basic categorical structures, while, for Kant, "unser Verstand, unser Erkennen bildet einen Gegensatz gegen das Ansich."[60] Kant's two-world metaphysic leads to a subjectivist skepticism, in which humans share universal structures of thought, but do not know things in themselves. It also limits us to a merely formal ethic, in which pure will is most important, not good action: As Hegel says, "was aber moralisch ist, oder an ein System des sich verwirklichenden Geistes wird nicht gedacht."[61] Given the general division between the world of reason and the world in itself, it is also not clear how reason becomes embodied in history and culture (e.g. in institutions reflecting morality), thus how the "true" self is a part of this historical, cultural development. In Hegel's philosophy of mind he portrays a biologically-and culturally-sensitive view of the self that attempts to overcome the weaknesses in both Hume's and Kant's theories.

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[59] Hegel, VGP, vol. 20, 333. "The general view of Kantian philosophy is that determinations like "generality" and "necessity" are not found in perception, as Hume had shown; perception is not their source, their source is the I, in my self-consciousness" (trans. DPA).

[60] Hegel, VGP, vol. 20, 386. "...our understanding, our knowledge, constitutes an opposition to the of-itself."

[61] Hegel, VGP, vol. 20, 368-9. "However, that which is moral, or a system of realized mind, is not thought."

In his interpretation of the inscription of the oracle of Apollo Hegel offers an experience- and action-oriented understanding of mind that overcomes problems in the Humean and Kantian views of self. He says of mind: "its being is its deed" ("sein Sein seine Tat ist"), or if I might put it somewhat more approachably, "mind is what it does."[62] It need not be doubted that thinking is one of the fundamental forms of action (Tätigkeit") Hegel has in mind: "[A]ls dies Denken meine Tätigkeit ist, so ist jene ebensosehr das Erzeugnis meines Geistes, und zwar als denkenden Subjekts, Meiner nach meiner einfachen Allgemeinheit, als des schlechthin bei sich seienden Ichs, - oder meiner Freiheit."[63] Nor need it be doubted that certain aspects of the human experience are transhistorical and transcultural. In Hegel, as in Hume, thinking allows us to create ourselves, our world of experience, and mind in general. But in Hegel, as opposed to Hume, the determinations of thought show universal regularity. Things are a product of mind, but mind works according to a generalizable scheme.[64] This lies at the heart of the difference between Hegel's view and any similar sounding view of mind that might be espoused by Hume, modern existentialists or deconstructionists that mind is what it does.[65]

Thinking and human experience are not fundamentally particular or incommensurable with that of others because of possible unique historical and cultural conditions; quite to the contrary, because we have generalizable categories shaping thought, there is a common ground accessible to all. Indeed,

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[62] Hegel, VGP, vol. 18, 51.

[63] "Because this thinking is my activity, the former is just as much the creation of my mind, and indeed as the thinking subject's, mine according to my simple generality, as that of myself [the I], by itself plainly and simply - or of my freedom." Hegel, Enzyklopädie, § 23.

[64] Hegel sees the "habits" or "customs" in Hume's philosophy as almost entirely willy-nilly: "Eine subjektive Allgemeinheit der Art ist die Gewohnheit; wir haben die Gewohnheit, dies für Recht, sittlich gelten zu lassen; dies hat für uns eine Allgemeinheit, aber nur subjektive Allgemeinheit, - andere haben andere Gewohnheiten." It appears that Hegel thinks that what is true here regarding habitual ways of thinking about morality is also true of other habits of consciousness. Hegel, VGP, vol. 20, 280.

[65] After Marx's thesis on Feuerbach, at the latest, he opts for a harder view of "self-creation". Standing Hegel on his feet largely means reverting to a view of the self more akin to Hume's, but in which the "habits" forming consciousness are embedded in economic processes that have their own dialectical logic. I think Marx's anthropology here does not bring philosophy and Hegelianism to an end, but instead provides evidence of his occasionally wanting interpretive skills. On this issue of self creation, Hegel seems to have simply been more balanced than Marx; but this is not to say that he always was.

given his view of the oracle espoused here we can even say Hegel fundamentally views mind (and consequently language, in which mind's categories are expressed), not as private, but as public.[66] It is precisely the general features that characterize the nature of mind. Given the general nature of thinking, the "deed" partially constituting mind, we find that we are not so much formed into unique (and perhaps isolated) beings, sectioned off into incommensurable language games; instead, each of us has the basic presuppositions for the understanding of and solidarity with others. Regardless of possible unique effects of culture and history upon our minds, certain regularities will always occur. This thinking then forms mind. Thinking within these parameters constitutes much of what mind does and is. [67]

But while thinking is one sort of activity forming mind, it is not the only one. Other action also constitutes man; and this action shows the historical component not clearly expressed in Kant's view of man. According to Hegel's view, mind also follows a pattern of rationally-grounded regularities in its historical development.[68] Looking at the structure of the philosophy of mind it is clear that Hegel offers the basis of a social view of reason - and a social view of the self - differing from that found in Kant. Hegel views mind as composed of three main divisions: there is subjective, objective, and absolute mind; and only the first division deals with standard themes of the philosophy of mind.

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[66] Hegel speaks of language as "general", being a vehicle of reason. Given that it is an expression of reason, which he views as the same in all humans, it follows clearly enough that it too is generally accessible. See Wissenschaft der Logik, in Werke, vol. 5, 126.

[67] In this sense Hegel views subjective mind as replacing Kant's transcendental ego. He will, however, surpass Kant in adding objective and absolute mind. With these "additions", Hegel depicts mind not just as an apriori structure, but as Robert Williams argues, an "intersubjective accomplishment."(See Williams, "Hegel's Concept of Geist" in Hegel's Philosophy of Spirit, 3.) Williams argues that one does not find a transcendental ego in Hegel which is devoid of empirical content, but always one which has already achieved some empirical content; so Hegel offers us a "developing foundation"(7). While he is correct in pointing this out, there is still a transcendental moment in Hegel: the self has faculties not merely derived from intersubjective activity, but also presupposed by it. For more on this see, Richard Windfield, "Commentary on Hegel's Concept of Geist" in the same volume, 23. On this issue Theunissen sees a basic conflict between Hegel's view of the transcendental self, with no intersubjective mediation, and the self as a socially-embodied interactive reality. See Hegels Lehre vom Absoluten Geist als theologisch-politischen Traktat. Highlighting the conflict between Hegel's logic and other texts, Habermas argues that Hegel's idealism cannot do justice to the intersubjective moments of his thought.

In subjective mind Hegel basically offers a view of our capacities for thinking. He works in the spirit of Aristotle here describing the elements constituting human soul: human anthropology (including our senses), consciousness (dealing with the senses, perception, understanding, reason) and psychology (including our various powers - for example, of imagination, memory and thinking). This constitutes a view of basic powers that transcend different historical periods and different cultures (being a part of our biological constitution). But while this might be considered by many to constitute the only area of philosophy of mind, Hegel by no means thinks so.[69]

In the section on "objective mind" Hegel treats external expressions of mind; this book deals with the same themes as his Philosophy of Right. It is a treatment of his social and political philosophy.[70] And given that Hegel couches this moral/political discussion in his explication of mind - as an aspect of mind - it is clear that he does not merely identify mind with the powers of human individuals. Rather, it exists in social forms of interaction, in institutions that embody reason. The action (Tätigkeit) forming mind is thus not merely the action of abstract thought, as a Kantian might contend; instead, practical action (expressed in sociopolitical affairs and embodied in institutions) also plays a role. It too shapes the world of mind and can be either rational or irrational. This thus indicates that not only biology, but also culture goes into forming the human being. Mind becomes embodied in its institutions, which shape individuals as individuals shape them.[71] So too is it, for example, that Hegel quotes the following story with approval: "Auf die Frage eines Vaters nach der besten Weise, seinen Sohn sittlich zu erziehen, gab ein Pythagoreer ... die Antwort: wenn du ihn zum

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[68] As Manfred Riedel correctly points out, however, the laws of nature and those espoused in culture differ. Those of nature cannot be chosen, while legal codes and morals are preserved insofar as they are known and willed. See Riedel, Materialen zu Hegels Rechtsphilosophie, vol. 2, 110.

[69] Hegel, Enzyklopädie, §387-482.

[70] In objective mind, Theunissen notes, the real free will becomes thematized, not just the free will "an sich". For mind to become really free it cannot merely know itself to be so. It must also will it, and put this will into action. See Theunissen, Hegels Lehre vom Absoluten Geist als theologisch-politischen Traktat, 112ff.

[71] Hegel, Enzyklopädie, §483-552.

Bürger eines Staats von guten Gesetzen machst."[72] Culture plays a decisive role in forming individuals. It makes possible the development of what Kant called our "mit Freiheit begabten Wesens," for only in a rationally-ordered state will we fully express our practical reason.[73]

"Absolute mind", treated in the final section of the Philosophy of Mind, constitutes another historical-cultural expression of mind. Here Hegel treats three disciplines that he says represent three different paths to truth: religion, art and philosophy. In these disciplines mind also takes an external form. Mind is embodied in their methods; in them - as in the sociopolitical world - mind undergoes a development. Indeed, the activity of developing them further is a part of minds practical activity of thinking.[74] This sense is quite clear from the Lectures on the History of Philosophy, where Hegel speaks of the quite practical "activity of thinking" in the development of its history in the discipline of philosophy: "Der Geist der Welt aber versinkt nicht in diese gleichgültige Ruhe. Es beruht dies auf seinem einfachen Begriff. Sein Leben ist Tat. Die Tat hat einen vorhandenen Stoff zu ihrer Voraussetzung, auf welchen sie gerichtet ist und den sie nicht etwa bloß vermehrt, durch hinzugefügtes Material verbreitert, sondern wesentlich bearbeitet und umbildet."[75] To think about the world is to form it. So the history of thinking about it is also to be recognized as a human production. It too undergoes a development in which innovation occurs as we re-work and re-form the existing knowledge. But its development is a development on basis of our transhistorical categories of thought; its development is not the development of things foreign to us, but a development of our very selves and of our sciences. As Hegel says: "der Verlauf der Geschichte ist

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[72] "When a father inquired about the best method of educating his son in ethical conduct, a Pythagorean replied: 'Make him a citizen of a state with good laws'." Hegel, RP, vol. 8, §153. Trans. T.M. Knox. Hegel's Philosophy of Right, 109.

[73] Kant, Anthropologie in pragmatischer Hinsicht, Werke, Vol. 10, §86, 625. While Kant saw that human nature has the potential for freedom, Hegel here more clearly spells out how it is attained, and how it necessitates rational material forms of interaction and rational institutions.

[74] Hegel, Enzyklopädie, §§553-577.

[75] Hegel, VGP, vol. 18, 21-22."But the mind of the world does not sink into this ambivalent stillness. This is based on its simple concept. Its action is its life. The action presupposes existing material, which it is aimed at; and it does not merely increase it, broadening it with additional material; instead, it substantially re-works and re-forms it" (trans. DPA).

es, welcher uns nicht das Werden fremder Dinge, sondern dies unser Werden, das Werden unserer Wissenschaft darstellt".[76] And at the same time, sciences – aimed as they are at truth – do not have a history and development merely inside individuals' minds, but also in the concrete world, in history. Individuals find themselves at a particular moment of history and the expression of a social mind larger than that of their individual consciousness. The development of these individual minds is thus caught up in this world-historical development of mind. Mind is not captured in the development of individuals, but in the development of civilizations and the entire history of humankind and human cultural production. Individuals find themselves in some moment of this larger development.[77] In M. Westphal's words: "the transcendental ego must be placed in the context of Spirit and its history....It's consciousness is not immediate, but mediated through its own external expressions."[78]

Yet, despite the emphasis of the cultural embeddedment of mind, it is equally essential to see that the development from one realm of mind to another is inter-connected, and all are based in our biological regularities. Although we form political systems and they in turn form us - and we form sciences that then form us - there is a substrate in this process that is transhistorical. Historical change occurs only within the parameters of our transhistorical biologically-determined realm of possibilities. The change is not evolutionary, but is a metamorphosis, a development of what we have in kernel always been. It develops as nineteenth-century organicists thought plants had always developed. All the levels of mind are hooked up to each other like the members of an organism, and the development shows a regularity like that of a DNA directed teleology, as we could now say. But there is no birth of new categories of thought because of changes in culture.

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[76] Hegel, VGP, vol. 18, 22. "[T]he process of history does not present the development of things foreign to us, but that of our own becoming, the development of our science" (trans. DPA).

[77] Questions about the influence of culture on thinking in general certainly arise here. In placing these three disciplines that aim at truth after his moral-political reflections, Hegel seems to imply that sociocultural factors not only play a role in allowing us to develop our practical reason, but also in allowing us to develop theoretical reason.

[78] Merold Westphal, History and Truth in Hegel's Phenomenology ,115. Westphal's account very clearly expresses the interaction between the natural and cultural/historical aspects of mind in Hegel's philosophy.

So, while Hegel emphasizes that humans raise themselves above nature through thinking and acting - and are caught in the temporal development of a social mind - he nevertheless always shows a strong naturalistic tendency, because the categories used in thinking - and our basic capacities for thought - have a biological basis. In the last analysis, the goal of human history and action is anchored in human nature, in the exercise of thinking, done as it is with permanent categories. So freeing oneself from nature is never a complete freeing.

In all of this basically Hegel offers an integrationist view of humans, showing parallels to some current interactionist models.[79] Humans are formed by nature and culture: they are in the unique situation of being cultural by nature. While their abilities are rooted in nature, they are developed only in culture.[80] With this Hegel offers us a view of mind - and self - that not only surpasses that of Hume's or Kant's, but that still has something to say to us. On the one hand, it avoids the traps of a biologism that tends to underplay the role of culture in human life; on the other, it avoids a pure constructivism, which makes the mistake Stephen J. Gould has pointed out of pretending life would be no different if we photosynthesized.[81] Although Hegel offers a broader view of mind than most anyone will want, at a time when too much philosophy either tends towards a simple biologism or a simple constructivism, it will still behoove us to examine Hegel's balanced and systematic thoughts on this issue. He offers a picture of a constructed self, but not a totally constructed one.[82]

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[79] See: Richard Lewontin; Rose, Steven; and Kamin, Leon, Not in our Genes; Biology, Ideology and Human Nature. See Hösle for a more traditional philosophical account of interactionism.

[80] As Plant notes, the logic provides a merely abstract means of achieving the reconciliation between humans and the world. It offers the tools to see the interconnectedness of experience. But the concrete reconciliation of humans and the world only occurs in history. See Plant, Hegel, 99ff.

[81] Stephen J. Gould, Ever Since Darwin, 252-3.

[82] Some more modern readings of Hegel tend to want to dismiss the transcendental moment altogether. They argue that Hegel is merely doing cultural hermeneutics. While such a view might make more appealing to many philosophers at a time when so many hold the attempts to secure the foundations of philosophy for obsolete, it cannot be said to offer an historically accurate picture of Hegel's philosophy. It may make sense to attempt a modern Hegelian philosophy like this, but it should not be mistaken for Hegel's view. Such a Hegelianism takes the opposite turn from the one Hegel took when faced with Kant's regulative ideas. It reduces all knowledge to a regulative function, including the logic, whereas, Hegel clearly viewed his logic as constitutive. For some interpretations of Hegel as a cultural hermeneuticist

1.7 THE IDEA IN THE LOGIC AND HISTORY

As already noted, in the Lectures on the History of Philosophy Hegel especially emphasizes that the "concretizing" which characterizes the process of the development of mind occurs in the history of thought as well as in the thought processes of the individual mind, and that this process of historical development requires that certain necessary forms of thought belonging to the idea itself be traversed. "Diese Formen sind nicht anderes als die ursprünglichen Unterschiede der Idee selbst; sie sind ihr also wesentlich, sie machen den Inhalt der Idee aus."[83] They are the contradictions found in the history of philosophy and the logic. And just as the logic, when rationally carried out, finally overcomes these contradictions, so too will the history of philosophy.

One problem is obvious here: Hegel often uses "idea" and "mind" interchangeably. And he has at least two different concepts of the notion of idea in his descriptions of the process of the concretizing of it. The "idea" described in the lectures and the logic come close to our common view of ideas; they are at least remotely akin to linguistic abstractions. (They are actually thought determinations that pervade thinking.) However, Hegel uses a more comprehensive view of the idea in the Phenomenology; there the idea includes material facts, subjective psychological tendencies, forms of economic and political life. In accordance with this latter view, realizing mind requires rational material relationships, i.e., humane economic and political forms; and the material forms of this stage of objective mind must be retained at the higher stages of absolute mind. The contradictions must be overcome at both levels, i.e., both in the logic and in the external expressions of mind in history and culture.

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see Steven B. Smith and M. Riedel. For a contemporary foundationalist attempt in the Hegelian tradition see Hösle, Hegels System.

[83] Hegel, VGP, vol. 18, 53. "These forms are nothing but the original differences of the idea itself; they are thus essential to it, they constitute the idea's content."

These two points are of particular importance regarding Hegel's view of idea. On the one hand, he identifies the idea with the content of his logic, which undergoes a formal development in the presentation of the WdL, which is in certain respect "completed" in that work; on the other hand, Hegel writes about the "releasing" (Entäußerung) of the idea in nature as well as of the application of it in the Philosophy of Nature and the Philosophy of Mind. Hegel did not often explicitly thematize these differences. But we must always bear in mind what aspect of the idea or mind he is talking about. Is it the idea in its formal aspect which we see presented in the logic (the idea before time, so to say) or the idea as external - both in nature and in the political, economic forms that we create as well as in the external form of the various scientific disciplines?[84]

In the discussion of mind here it is important not to loose sight of this, because Hegel also treats "mind" as synonymous with the "idea". As Hegel very clearly states: "Der Geist ist immer Idee."[85] And in many contexts where Hegel uses these words synonymously, mind is also treated as organic, for example, as having a teleology. One such example comes up in the Encyclopedia version of the Philosophy of Mind, where "knowledge of mind" ("die Erkenntnis des Geistes") serves as mind's implicit end ("Zweck") and is characterized as "the most concrete, thus the highest and most difficult" knowledge ("das konkreteste, darum höchste und schwerste").[86] (It serves, though, as the guiding interest for the development of this science.) But again, such knowledge is not of the categories alone. As Hegel says describing the organic process of the development in the logic:

> So wird das Bewußtsein auf seinem Wege von der Unmittelbarkeit aus, mit der es anfängt, zum absoluten Wissen als seiner innersten Wahrheit zurückgeführt....So wird noch mehr der absolute Geist, der als die konkrete und letzte höchste Wahrheit alles Seins sich ergibt, erkannt als am Ende der Entwicklung sich mit Freiheit entäußernd und sich zur Gestalt eines

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[84] The logic is not aimed so much at thinking about reality as it is at thinking about what it is to think about reality.
[85] Hegel, Enzyklopädie, §385. "Mind is always idea."
[86] Hegel, Enzyklopädie, §377.

> unmittelbaren Seins entlassend, - zur Schöpfung einer Welt sich entschließend, welche alles das enthält, was in die Entwicklung, die jenem Resultat vorangegangen, fiel und das durch diese umgekehrte Stellung mit seinem Anfang in ein von dem Resultat als dem Prinzip Abhängiges verwandelt wird.[87]

The concrete truth of mind or idea does not merely entail truth of the idea as expressed in its formal aspect in the logic; instead, it includes that aspect "released" into the world ("mit der Freiheit entäußernd ... zur Schöpfung einer Welt sich entschließend"). This concrete and most difficult to grasp truth then is not reached merely by understanding the idea in its formal development in the logic. One must also see this idea in its external form. In its most encompassing sense, then, the idea is not to be seen in isolation from the material reality in which it is also manifest - and the very scientific systems developed are a part of that material reality. The goal of the philosophy of mind - namely, to see mind in everything - does not merely entail seeing its development in the formal conceptualization of the logic; it also requires seeing its reality in the material world and creating the world (for example, in shaping political realities) in accordance with its norms. This organic development of mind thus entails a development outside of the mere formal sphere of the logic. Thus, only when mind sees itself in all of this, do we reach the goal of the philosophy of mind; and only when this goal is reached is this system as a whole truly scientific and organic. Only then do we see mind in everything. Only then do we see "Alles tun des Geistes ist ...nur ein Erfassen seiner selbst."[88]

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[87] Hegel, WdL I, 60; Miller, 71. "Thus consciousness on its onward path from the immediacy with which it began is led back to absolute knowledge as its innermost truth. This last, the ground, is then also that from which the first proceeds, that which at first appeared as an immediacy. This is true in still greater measure of absolute spirit, which reveals itself as the concrete and final supreme truth of all being, and which at the end of the development is known as feeely externalizing itself, abandoning itself to the shape of an immediate being – opening or unfolding itself into the creation of a world which contains all that fell into the development which preceded that result and which through this reversal of its position relatively to its beginning is transformed into something dependent on the result as principle."

[88] Hegel, Enzyklopädie, §377. "Consequently everything done by spirit is merely an apprehension of itself, and the purpose of all true science is simply that in all that is, in heaven and on earth, spirit should recognize itself."

Mind in its immediateness is thematized in this quote from the logic, that is, mind in its biological state, before culture, before "linear time". But mind exists there merely in abstract form. In fact, mind is always being expressed in culture. "Absolute mind" is developed in history: and individual humans find themselves taken up at one moment of mind's developmental expression in linear time. Riedel discusses this issue partially in reference to theory and practice in Hegel. In his words: "Der Hegelsche 'Geist' ist nicht. Er stellt sich her."[89] In an important sense Hegel cannot rightly be accused by Marx as being one of those philosophers who have merely interpreted the world, when the point is to change it. As Riedel emphasizes, Hegel's philosophy does not draw its sense from contemplating a non-changing god, but "in dem pragmata der Menschenwelt".[90]

1.8 THE TRANSCENDENTAL PRINCIPLES OF ORGANIC SYSTEMS

The science of mind thus shows many parallels to other parts of Hegel's philosophy. To be truly scientific its relationship to the transcendental idea must be clear. Insofar as this is achieved it will be true, scientific and organic; its development is analogous to that of a plant:

> Der Keim der Pflanze - dieser sinnlich vorhandene Begriff- schließt seine Entfaltung mit einer ihm gleichen Wirklichkeit, mit Hervorbringung des Samens. Dasselbe gilt vom Geiste; auch seine Entwicklung hat ihr Ziel erreicht, wenn der Begriff desselben sich vollkommen verwirklicht hat oder, was dasselbe ist, wenn der Geist zum vollkommenen Bewußtsein seines Begriffs gelangt ist. [91]

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[89] Riedel, Theory and Practice, 52.

[90] Riedel, Theory and Practice, 61. While Riedel's account is often clarifying, in general he fails to give the necessary emphasis to the transcendental moment in Hegel. In Tom Rockmore´s generally very good Hegel account, he makes similar exaggerations, even going so far as to argue that Hegel's circular epistemology is a "form of relativism". (See "On Hegel's Epistemology and Contemporary Philosophy," 44.) If that is true, it is so only by virtue of robbing the term relativism of its normal meaning. Such cultural hermeneutic interpretations of Hegel make the mistake Inwood mentions saying: "If Hegel is made too hygienic, his successors, Kierkegaard and Marx for example, may be left with no interesting and telling response to him. If each philosopher taken separately is made too 'interesting', then they might all end up saying the same thing and thus saying nothing to each other." See Hegel.

[91] Hegel, Enzyklopädie, §379, add. "The limiting of itself may already be seen in living being, where a sensuous representation of the Notion, the germ of the plant, completes its development by bringing forth an actuality like itself, the seed. Spirit is the same in this respect, for its development has also reached its goal when its Notion has completely actualized itself, that is to say, when spirit has attained complete consciousness of its Notion."

In the final analysis, Hegel thinks that the goal of the philosophy of mind leads beyond itself. The development of mind spoken of here progresses through a series of stages also developed in the logic and reflected in the history of philosophy: subjective mind, objective mind and absolute mind. Full consciousness of the concept requires knowledge of more than the formal aspects of the concept alone. Mind transcends the level of the logic.[92]

The similarities to other parts of Hegel's work are clear: the stages spoken of here are the same formal ones developed in the logic and manifest in external form in the history of philosophy. In reflecting principles of reason the disciplines are organized into systematic wholes. Hegel characterizes the various scientific disciplines in philosophy as organic, systematic processes insofar as they reflect mind's laws and are ordered according to principles of reason.

Here it has been clearly shown that Hegel identifies various systems with an organism when they are realized and scientific. In one sense Hegel identifies the organism with the idea present abstractly in the logic, but in another sense also concretely with everything that we perceive and with rational material, economic arrangements. Both the entirety of these expressions of the idea and the individual ones are described as organic. However, in order to perceive the sub-systems themselves as organic we must alway see how the various levels hook up with one another and stem from reason. While Hegel's usage of the organism concept is very broad indeed, in the last analysis it is always a rationally unified whole, based in reason. It is not merely certain physical objects that are such wholes, but also rational systems of all sorts.

What is more, Hegel also clearly shows his indebtedness to Kant's view of science. All sciences have an apriori, philosophical component. Next I shall examine Hegel's views of various forms of objects

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[92] Hegel, Enzyklopädie, §385.

in the logic and show that he there introduces mechanical, chemical and organic objects and perspectives, which create a philosophical basis for the respective sciences of mechanics, chemistry and organics. I shall also show that he does not fall into reductionism, but thinks that each of these perspectives retains its area of legitimacy.

CHAPTER TWO

LOGICAL FORMS OF OBJECTS

2.1 NATURAL AND THEORETICAL ORGANISMS

Hegel's statements about objects and organisms can be easily misleading. While it is clear that he thinks that there are animate organisms in nature (or organisms with soul) and those which are without soul (or the animating principle of living nature), the clarity ends there: on the basis of some texts one can be led to think that all objects are thus organisms or organism-like, as Rolf Peter Horstmann asserts; on the basis of others it appears that only some non-animate objects are "organisms".

In this chapter I shall deal with Hegel's logical treatment of objects in the Science of the Logic, where under the heading "Objectivity" he lists three kinds of objects corresponding to three logical perspectives: the mechanical, chemical and teleological. I shall argue that not all objects are organic, but only the teleological ones, which also correspond with the sphere of reason. I shall explicate what characterizes those objects. I shall then explicitly deal with Hostmann's view that Hegel thinks of all objects as organic, and that he means for his organic view to be understood only metaphorically.

Hegel deals with the diverse sorts of objects in the final section of part two of the logic; there he introduces a mechanical, a chemical and an teleological perspective, indicating that they represent three different ways of looking at things in the world.[93] The problem is to understand whether he thinks that each particular object can be viewed appropriately from each of the perspectives - and what that implies - or whether there are three different types of objects, each suitable for one of these perspectives. While each of these alternatives has a certain plausibility, I shall argue that the textual evidence better supports the latter view.

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[93] In the Encyclopedia the chapter heading is "the Object", in the Science of the Logic, "Objectivity".

Throughout the text Hegel indicates that the passing over from one perspective to another higher one follows a developmental pattern; in sorting out Hegel's view of objects it will thus be necessary to clarify Hegel's understanding of what "development" in the logic implies. In his explication of these different points of view he indicates that the notion is present in all of them, at least latently, and that at the levels of mechanism and chemism the object does not correspond to the idea. Only through the process in which one passes from one perspective over to another does the object finally attain truth. As Hegel says, "Die Zweckbeziehung hat sich aber als die Wahrheit des Mechanismus erwiesen".[94] Or compare: "Der Zweck hat sich als das Dritte zum Mechanismus und Chemismus ergeben; er ist ihre Wahrheit".[95] How are such quotes to be best interpreted? Are there three different sorts of things, with only one sort corresponding to the notion? Or are there three fundamental perspectives from which we can view things in the world, and only viewing them from the highest perspective allows us to see them as they really are - namely as organisms? Or is there another alternative still?

Hegel thinks that "mind is in everything", and he clearly thinks that the notion undergoes development. But we must clarify what that means. Does the fact that mind is in everything imply that everything mirrors mind in its full development – whatever that might mean? Put concretely, does the development of the idea imply that the very objects viewed as mechanical and chemical then turn into organic objects when viewed differently - that only from the perspective of reason that they are judged fittingly? Just as we begin the logic, moving through a perspective where we view a thing as merely here and now, of indefinite character, do we also move through perspectives where we see each and every object as mechanical, then chemical, then finally teleological and organic? To rephrase it, does each object have the potential to fully express the notion that is latent in it? Will

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[93] Hegel, WdL II, 183; Miller, 735. "the relation of end has proved to be the truth of mechanism."

[95] Hegel, WdL, III, 188; Miller, 739. "End has shown itself to be the third to mechanism and chemism; it is their truth."

the notion become actual in each type of object? Or do we need to understand the development of the notion differently?

I shall argue that while the notion is indeed in everything, it is in some of them in an unrealized form, in others in a realized form. Seeing the notion in everything means seeing the notion in all of its stages - i.e., the expressions of it at the levels of understanding and reason. Viewing nature from the perspective of reason does not allow us to see all things as expressing reason in its developed form; it simply allows us to see things in their proper context and in relationship with other things. In seeing reason's development reflected in the world, one sees objects reflecting understanding and reason; but each of these sorts of objects is "preserved" as they are "overcome" in the development of the idea. This is precisely what Hegel means in saying that each level is "aufgehoben": it is both overcome and preserved.

Among other things, this reading fits much more consistently to the views expressed in the Philosophy of Nature than does the alternative one. Throughout his treatment of the various branches of the philosophy of nature it is clear that he does not wish to replace physics or chemistry with something like a universal biology. He warns again and again of interpreting objects according to viewpoints inappropriate for them. Finally, he indicates that the understanding (not reason) is the appropriate point of view from which to view mechanical and chemical objects in nature.[96]

2.2 OBJECTIVITY: THE TREATMENT IN THE SCIENCE OF THE LOGIC

[96] This is related to a point made by K.H. Ilting: "Hegel beabsichtigt nicht etwa, in allen Gestalten der Natur des Geistes nur immer wieder dieselbe logische Struktur anzuweisen, sondern er möchtet zeigen, daß man diese Gestalten als einen Entwicklungsprozeß darstellen kann, in dessen Verlauf das, was er "Idee" oder auch "Absolute Idee" nennt, immer mehr hervortritt" (Ilting, "Hegels Philosophie des Organischen", 367).

Before the discussion of the "idea" in the subjective logic Hegel deals with "objectivity". This section is sub-divided into "mechanism", "chemism" and "teleology". I shall first outline the treatment of this in the Science of the Logic, then in the Encyclopedia.[97]

In the culmination of his view of mechanism in the final part of the chapters on the theme, "The absolute mechanism", he notes that the fundamental feature of mechanism is that the objects have their center outside of themselves.[98] Here the ideal (the physical law) exists as a "should" external to the thing. Mechanical objects do not respond to stimulus according to inner ideals, but because of external ones: although the external world is moved by laws, the laws are not internal to the physical objects. Because this is the case Hegel views the mechanistic object as a totality (a "Totalität") that is indifferent ("gleichgültig") to its determinations. The law controls it from outside; it is not determined by laws internal to it.[99]

Although talk about objects being "indifferent" to their parts may sound quite mystifying, the main point is simply that "mechanical" objects only react to laws of physics, they have no internal laws driving them. When a stone falls, it does so because of the law of the law of gravity (external to it), not because of an internal tendency to find its correct place in the world as in the Aristotelian physics. That just such objects are also "indifferent to their determinations" means that we do not understand the parts to be intrinsically connected with each other. If I break a rock into pieces, the rock does not stop being a rock; instead, I end up with two rocks. The two "parts" are not indeterminately united such that both are necessary for the rock to be a rock. It is different with organisms. If I cut a mammal in half, it will die. The whole and parts are intrinsically united. But we have not reached this complex, organic level of determination yet.

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[97] S. Enzyklopädie, §§194-212; WdL, III, 150-204.
[98] Hegel, WdL, III, 173.
[99] Hegel, WdL, III, 169-172.

However, a primitive level of internal determination pointing in this direction begins at the stage of chemism.[100] Hegel says that mechanistic objects have a "contradiction" between the idea and the object that begins to be overcome at the stage of chemism. A rock does not undergo an internal process of becoming itself; it becomes a rock solely because of the work of external forces. It does not have anything that we can vaguely compare to an idea internal to it, pushing it to take its particular form. Chemical objects, however, undergo processes in connection with other external things that more closely resemble internally-caused action. So Hegel says, "Chemismus ist die erste Negation der GleichgültigenObjektivität und Äußerlichkeit der Bestimmtheit".[101] According to Hegel a chemical object (such as a crystal) shows a certain internal relationship of its parts; the crystal undergoes a growth that resembles the process of assimilation. The action of external factors on a chemical compound can cause changes in that chemical compound and a process resembling development. So, it appears that the parts are more closely connected than those of mechanical objects. Hegel says that in the completion of the chemical process the concept is freed from external determination alone. This leads over into "teleology".[102]

Kant contrasted mechanism and teleology. In so doing he helped set the tone for Hegel's contemporaries: against this background Hegel tells us, "Die Teleologie wird vornehmlich dem Mechanismus entgegengestellt, in welchem die an den Objekt gesetzte Bestimmtheit wesentlich als

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[100] McTaggart interprets Hegel as speaking of many different types of objects when discussing "mechanism", but "collapsing" all objects "into one" at the level of "chemism". See McTaggart, A Commentary on Hegel's Logic, 253-4. But McTaggart's interpretation here and his interpretation of Hegel's view of substance seem quite questionable in light of the fact that Hegel often brings up specific objects in his discussions of both chemism and teleology. At the level of chemism, he speaks in great detail about crystals, to name one example.

[101] Hegel, WdL, III, 180; Miller, 731. "Chemism itself is the first negation of indifferent objectivity and of the externality of determinateness."

[102] Hegel, WdL, III, 181. Given that this discussion is so strongly influenced by empirical observation it may indeed be out of place in a pure logic. The long and short of what Hegel is saying is that we perceive objects of various kinds. Some have parts intrinsically connected, others have parts less intrinsically connected, others have parts not necessarily connected with each other at all. While some such distinctions are possibly useful, they paralleling divisions in modern natural science, it is not clear to me how such distinctions belong to the framework of a teaching of the categories. That we perceive things to be such because we have learned about different sorts of things by looking at and experiencing the world. The chemical objects may offer a good example. For what its worth, it is certainly imaginable that some cultures do not have concepts of them.

äußerliche eine solche ist, an der sich keine Selbstbestimmung manifestiert."[103] For teleological objects, however, purpose is no longer external. They are not moved because of laws external to them, but because of internal laws. And the parts are necessary for the survival of the whole. So Hegel says teleological objects are not "indifferent" to those parts.[104] We understand the parts of the object to form an intrinsically connected whole.

As in all of Hegel's triads in the logic, here too the final of the triad subsumes the other parts as moments of itself. In this case mechanism and chemism together constitute teleology. Teleology is their "truth", as Hegel repeats often enough.[105] For Hegel, purposiveness is that which is essential in teleology.[106] Furthermore, teleology has the notion in its existence; this is its "principle of freedom".[107]

Hegel takes his queue from Kant in this. Like Kant he views the opposition between teleology and mechanism primarily as the more general opposition between freedom and necessity. Those things which are directed internally have a freedom which those that only follow external laws of nature do not. To cite a short example: animal organisms, which show a more developed form of teleology than plants, have the freedom to move about, choosing various plants and animals to eat. A stone, has no choice about where to fall to the ground. A stone is very clearly not in the realm of freedom.

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[103] Hegel, WdL, III, 182; Miller 734. "Teleology is especially contrasted with mechanism, in which the determinateness posited in the object, being external, is essentially one in which no self-determination is manifested."

[104] Hegel is bound to find a lot of opponents to his word usage here. He seems to personify his categories, giving them intentionality. I am not sure whether it helps us a lot to think that a crystal is less indifferent to its parts than a gem stone; and even objects Hegel characterizes as organic (like the solar system) can be completely indifferent to their own existence. It is, however, possible to re-write this without anthropomorphizing the concept world, as I try to indicate.

[105] Hegel, WdL, III, 183. See also 181, 188. In reference to the view of the truth of oppositions portrayed in the "Logic of Reflection" Hegel notes, "In dem jede der beiden entgegengesetzten Seiten an ihr selbst die andere enthält und keine ohne die andere gedacht werden kann, so folgt daraus, daß keine dieser Bestimmungen, allein genommen Wahrheit hat, sondern nur ihre Einheit" (Quoted in Michael Wolff, Der Begriff des Widerspruchs, 131f.)

[106] Hegel, WdL, III, 185."Zweckmäßigkeit ... ist ... das Wesentliche des Teleologischen."

[107] Hegel, WdL, III, 185. "Die Teleologie hat im allgemeinen das höhere Prinzip, den Begriff in seiner Existenz, der an und für sich das Unendliche und Absolute ist." Indeed, as Hegel also says, "Freedom is the final purpose of the world." RP.

At its lowest level of determination "teleology" is subjective, "the subjective purpose".[108] Here it exists as the attempt and drive to "set" itself in the outer reality. According to Hegel: "Einerseits ist diese Reflexion die innere Allgemeinheit des Subjektes, anderseits aber Reflexion nach außen; und insofern ist der Zweck nach ein Subjektives und seine Tätigkeit gegen äußerliche Objektivität gerichtet."[109] The objective world exists (external to and) in opposition to the teleological object. The external world then at this point has no purpose, only the subject does; and the subject sees itself in opposition to this world. Subjective purpose is non-realized purpose, localized in an individual subject, as a mere unfulfilled drive.

Next though comes a negative moment in which this subjectivity and opposition to the external world are overcome. The purposive subject pushes itself towards fulfillment; this requires that it integrate the world into itself, that it assimilate it. It pushes itself towards the "Vereinigung des objektiven Seins mit demselben...".[110] The world is made a "means" for its purpose.[111] The "subjective purpose" - the individual object in its form, which has an element of separateness from the world - appropriates what is external to it into itself. It makes it the means into its realization and so overcomes it. Put simply, the means are the external things, in the process of being internalized by a purposive individual subject. So it is that Hegel refers to the means as "objects".[112] The means are objects in the process of being assimilated, in the process of becoming a factor of the individuals development.

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[108] Hegel, WdL, III, 189-92. As mentioned, Kant views the teleological principle, not as constitutive, but merely as regulative. We need the concept to make sense of certain realities, such as biological phenomena and the world as a whole. As a mere reflective principle, it is formed merely through induction, on the basis of empirical observation. Wohlfahrt discusses the inductive, reflective quality of teleology in Kant. (See, Wohlfahrt, Der spekulative Satz, 6ff.)

[109] Hegel, WdL, III, 190; Miller 741. "On the one hand this reflection is the inner universality of the subject, while on the other it is a reflection outwards; and to this extent end is still a subjective end and its activity is directed against external objectivity."

[110] Hegel, WdL, III, 191; Miller, 742. "Positively, it is the realization of the end, namely the union of objective being with it."

[111] This is discussed in the section called "das Mittel".

[112] Hegel, WdL, III, 194.

The final level of teleology is that of realized purpose ("ausgeführter Zweck"). The purpose wields a greater power over the object; and in incorporating the object into itself it gives the object purpose.[113] It is the truth of the teleological process, or "das Aufheben des Scheins der Äußerlichkeit."[114] The difference between subject and object is merely one of appearance. At the higher level of "purposiveness" it is recognized that subjects always incorporate objects, becoming one with them. This is recognized: as realized purpose, the original opposites are fully resolved. A unity is produced out of the various moments that constituted the original oppositions, differentiation and appearance. And this unity is the truth of those moments.[115] The "conclusion" ("Schlußsatz) is a product of the purposive action ("zweckmäßiger tuns").[116] It is the result of the assimilation process in which the external objects are united with the subject.

According to Hegel we can observe purpose either as subjective (i.e., in the acting and thinking subject) or as that subject's means, as that which it takes into itself in order to realize this purpose: they are just two parts of the same process. As Hegel puts it, "Alle Objekte also, an welchen ein äußerer Zweck ausgeführt ist, sind ebensowohl nur Mittel des Zwecks."[117] The form is the "infinite self-determination of the notion" ("unendliche Selbstbestimmung des Begriffs"), limited in its externality.

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[113] Hegel, WdL, III, 195-98.

[114] Hegel, WdL, III, 197; Miller, 742. "...the sublating of the illusory show of externality."

[115] Hegel, WdL, III, 195-99.

[116] Hegel, WdL, III, 200.

[117] Hegel, WdL, III, 200; Miller, 750. "All objects, therefore, in which an external end is realized, are equally only a means of the end." Pinkard argues that Hegel confuses functionalism with teleology. According to his reading - and the same would be true of any "hard" reading of Hegel on the question regarding whether all objects are organisms - Hegel thinks that if any function, x, can only be achieved through y and z, and there is such a function, x, then y and z exist for that thing. See Pinkard, Hegel's Dialectic. The Explanation of Possibility, 89-92. One can indeed find this logical error in Hegel, and it parallels language usage in which he speaks of the parts of objects being more or less "indifferent" (gleichgültig) to one another. This should not be overlooked by those who would like to defend a hard reading of Hegel on the question of the organism concept. If one views all substances as organisms – and thus as teleological – one must keep in mind that Hegel implies this type of functionalism by teleology and not a more severe Aristotelian variety of teleology.

2.3 THE OBJECT: CHARACTERIZATIONS FROM THE ENCYCLOPEDIA

I shall take a closer look at Hegel's Encyclopedia treatment of the "object", which – while leading to some repetition – shall also deepen the ideas: being for his students at university, sometimes the Encyclopedia accounts are more lucid and straight forward than those in the WdL. The treatment of the object is from sections 194 through 212, just before Hegel introduces the "idea".

The object with which he begins is that object that all other objects are mere part of, what Leibniz calls the "monad of monads". Yet, Hegel thinks that Leibniz's view that "the Absolute is the Object" is a mere partial truth.[118] At this level of observation all differences between independent substances are blurred.[119] One has only one thing, or as Hegel says on other occasions when criticizing Schelling's similar view, one has "the night in which all cows are black". The point of view in which all sets are seen as one set does not always preserve the differences between the sets. Hegel praises Fichte for overcoming this Leibnizian, Spinozan viewpoint and preserving the individuals in the whole.

Clearly critical of the Leibnizian whole - with no distinctions - Hegel introduces the main types of distinctions he thinks are to be preserved in the most general of all sets, the three forms of objectivity: the mechanical, chemical and teleological objectivity.[120] These are the three types of objects constituting the most general of all categories characterized under the general title heading, "the object"; and the differences between these types of objects need to be retained, even when we view them altogether as one set, which for its part is a teleological object. So we end up with a

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[118] Hegel, Enzyklopädie, §194.
[119] Hegel, Enzyklopädie, §194, add.
[120] Hegel, Enzyklopädie, §194, add. n. 2.

"monad of monads" in which the parts retain their difference. It is also clearly enough indicated that these forms of objectivity constitute different kinds of things, not just different ways of looking at the same things: "Das mechanisch bestimmte Objekt ist das unmittelbare, indifferente Objekt."[121] The mechanical object is one kind of object; Petry translates this as "the object of the mechanical type".[122]

2.31 THE OBJECT OF THE MECHANICAL TYPE

This "object of the mechanical type" is the notion only potentially ("der Begriff nur an sich"). It is a mere "composite" ("Zusammengesetztes"), an "aggregate" ("Aggregat"). Such an object has merely an external relation to other objects.[123] Although mechanism is "the category which primarily offers itself to reflection", it offers "a shallow and superficial mode of observation".[124] While such a mode of observation is befitting of some things, it is not befitting of them all.

The mechanistic point of view does not allow us to penetrate the full depths of nature, but only an aspect of it. So it is a misfortune that the attempt is so often made to view all of reality from this level: "In der Natur sind es nur die ganz abstrakten Verhältnisse der noch in sich unaufgeschlossenen Materie, welche dem Mechanismus unterworfen sind."[125] This quote reveals what mechanistic perspective can and cannot do. While this point of view does allow us to grasp some aspects of reality, it does not allow us to understand of all of them. This is exactly Hegel's point in the Philosophy of Nature where Hegel says the perspective of the understanding or reflection is "fitting"

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[121] Hegel, Enzyklopädie, §194, add. n. 2. "The mechanically-determined object is the immediate, indifferent object." (trans. DPA).

[122] All of these sorts of objects are comprised of oppositions or contradictions. Each is a "negative unity"; or as Hegel says, "all Dinge [sind] an sich selbst Widersprechend" (Quoted in Wolff, Der Satz des Widerspruchs, 157.)

[123] This "object of the mechanical type" is explained in §§195-199.

[124] Hegel, Enzyklopädie, §195, add.

for the mechanics, but not for organic objects. Here too, this is stressed. It cannot explain all objects. But this does not mean that it has no appropriate role: "...so ist doch auch anderseits dem Mechanismus ausdrücklich das Recht und die Bedeutung einer allgemeinen logischen Kategorie zu vindizieren und derselbe demgemäß keineswegs bloß auf jenes Naturgebiet zu beschränken, von welchem die Benennung dieser Kategorie entnommen ist."[126] Mechanism allows us to explain certain sorts of objects appropriately, and it even offers us a partial explanation of other sorts of objects: "Auch im Gebiet der geistigen Welt hat der Mechanismus seine, jedoch gleichfalls nur untergeordnete Stelle."[127]

In the development of the concept of a mechanistic object we move from a less-determined concept of objects with fully disintegrated parts towards one with a greater integration of parts. In the broad spectrum of objects characterized as "mechanistic", some of them display greater organization than others, until some (while still best explained as mechanistic) come close to mirroring the organizational structure of chemical objects. Mechanistic understanding views a given thing as basically having separable, independent parts - parts able to be fully understood outside of their connection to the whole. But some of these mechanistic objects consist of parts that show some affinity towards each other; finally in this continuum of objects we find those that are only adequately perceived as having parts with affinity, and that themselves show affinity to other objects. So the "development" moves from the mechanistic view of things with parts that show the first signs of affinity towards each other (i.e. absolute mechanism) finally to chemism.[128]

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[125] Hegel, Enzyklopädie, §195, add. "In nature it is only the veriest abstract relations of matter in its inert masses which obey the law of mechanism" (trans. Wallace).
[126] Hegel, Enzyklopädie, §195, add. "We must not on that account forget to vindicate for mechanism the right and import of a "general logical category" (trans. Wallace).
[127] Hegel, Enzyklopädie, §195, add. "Even in the world of Mind, mechanism has its place; though there, too, it is a subordinate one."
[128] Chemism is treated in §§200-203.

2.32 THE CHEMICAL OBJECT

As in the mechanical object, so too in the chemical one, the notion only exists "latently". In fact, the chemical and mechanical objects are often classified together as one sort of object and opposed to objects of the organic type. But this does not capture their differences with correct sophistication: they differ from each other "in der Art, daß das Objekt, in der Form des Mechanismus, zunächst nur gleichgültige Beziehung auf sich ist, wohingegen das chemische Objekt sich als schlechthin auf anderes bezogen erweist."[129] Chemical objects are the sort of things they are because of their relationships with other things: "Die chemisch-differenten Objekte sind das, was sie sind, ausdrücklich nur durch ihre Differenz und sind so der absolute Trieb, sich durch- und aneinander zu integrieren."[130]

This essentially elucidates the meaning of the first sentence in the section about chemical objects: "Das different Objekt hat eine immanente Bestimmtheit, welche seine Natur ausmacht und in der es Existenz hat."[131] They have an internal determination pushing them to relate to other objects. Rocks do not relate to other rocks, but hydrogen does interact with oxygen. The chemical "different object" is one particular sort of object, not just any object viewed from the point-of-view of chemism.

The chemical objects have a certain bias (an attraction), yet they are immediately independent from one another. Through the lenses of the chemical point-of-view one passes back and forth from these two presuppositions. The parts are neither fully dependent nor fully independent. This tension is

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[129] Hegel, Enzyklopädie, §200, add. "chemism and mechanism are very decidedly distinct. The object, in the form of mechanism, is primarily only an indifferent reference to self, while the chemical object is seen to be completely in reference to something else."

[130] Hegel, Enzyklopädie, §200, add. "Objects chemically biased are what they are expressly by that bias alone. They are the absolute impulse towards integration by and in one another."

[131] Hegel, Enzyklopädie, §200. "The not-indifferent (biased) object has an immanent mode which constitutes its nature, and in which it has existence."

overcome in teleological objects.[132] There the parts of objects show full integration with one another, constituting moments of the object's end.[133]

2.33 THE TELEOLOGICAL OBJECT

Section 204 is an introduction to the thematic, which points to the development of Hegel's view of teleology, developed in sections 205-212. In principle, he states there the fundamental ideas which he later merely extrapolates on. At the first level of observation the teleological objects have only a subjective end or purpose. The external world is still opposed to them and maintains a difference from them. However, in the process of the development of this concept, in their "realization", the teleological objects internalize the objects external to them. An object of this sort makes those external things "identical with itself". It "turns itself into the other of its subjectivity and objectifies itself," thus canceling out the difference between itself, as subject, and the other, as object.[134]

The difference between final and efficient causality is significant because these two types of causality stand at the root of the difference between teleological objects and all other kinds.[135] The sphere of efficient causality is that of mechanism and chemism; it is the sphere of necessity in which objects react to one another because of external laws. In organic objects, however, final causality plays a role: the organic things carry their causality in themselves.[136]

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[132] Teleological objects are discussed in §§204-212.

[133] Hösle notes an important difference between chemical and organic objects: the beginning of the chemical process is still different from the end, whereas organic objects retain a unity in the process of development. (See, Enzyklopädie, §335. This is discussed in Hösle, "Pflanze und Tier", 378.)

[134] Hegel, Enzyklopädie, §204.

[135] Hegel, Enzyklopädie, §204.

[136] Hegel did not subscribe to a view of external teleology of the ilk that some characteristic of an object occurring earlier in time is due to something occurring later and that things are "pulled" toward their destiny, if you will.

Like Kant, Hegel differentiates between external teleology and internal teleology. He distances himself from views of final cause as merely external, first praising both Aristotle and Kant for surpassing such views and seeing the final cause as internal to certain kinds of objects.[137] External causality allows us to see how finite things point beyond themselves, but it can be easily exaggerated. External causality is seen in the point-of-view of utility, from which vantage point objects in the world are fulfilling purposes external to them.[138] So we can see the whole world of objects as existing as material for the realization of the notion, incorporated into it. We can approach it all as if it is there for this purpose, to be thought by us. But Hegel criticizes the short-sightedness of this view, arguing from the point of view of natural sciences - which should not come into out-and-out conflict with philosophy - that this viewpoint has "failed to give a genuine insight into the nature of things."[139] While it is true that finite things are not ultimate, and they themselves "point beyond themselves", that is not enough: "we must pay attention to their positive content."[140] Should we fail to give this positive content its due, we can be led "leicht in dürftige Reflexionen...so z.B. wenn nicht nur der Weinstock unter dem Gesichtspunkt des bekannten Nutzens, den er dem Menschen gewährt, betrachtet wird, sondern auch der Korkbaum in Beziehung auf die Pfropfen, die aus seiner Rinde geschnitten werden, um die Weinflaschen damit zu verschließen."[141] In short, this perspective leads to great absurdities when taken to extremes.

Teleological objects, however, do not exhibit merely external teleology of this trivial sort, but also internal teleology. This is most clearly visible in the animal world, seen in animal needs and drives. Hegel refers to the "felt contradiction" ("der gefühlte Widerspruch") of the one-sidedness of mere subjectivity, in which one sharply accentuates the difference between subject and object. Appetite

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[137] See Enzyklopädie, §§204, 205.
[138] Hegel, Enzyklopädie, §205, add.
[139] Hegel, Enzyklopädie, §205, add.
[140] Hegel, Enzyklopädie, §205, add.

itself is "the conviction that the subject is only a half-truth, no more adequate than the objective."[142] In fulfilling their appetites animals must assimilate the objects external to them - a process through which the animal thus becomes one with the external world and overcomes the opposition between subject and object. And what is true of animals is also true of the development of thought: subjectivity and objectivity are presupposed in immediacy, but the difference between them is overcome in thinking.[143] Thinking subjects come to see a unity between themselves and the objects thought about.

Teleological objects - at the level of mere subjective purpose - have a "deficit", thus they are forced to turn outwards to try to compensate for this deficit. This takes them to the next stage of development in which the objects appropriated serve as a means for them: "The end lays hold over the object immediately because it is the power over the object."[144] Through this assimilation it eventually becomes one with the object and the purpose is realized. However, the process for finite objects does not stop here. Each of these, even when they are ends, becomes in its turn a means for other objects, ad infinitum.[145] So, each of the teleological objects (these organisms) becomes a part of a still greater organism until we have the set of all things, mind and notion, in which all of these sorts of objects - mechanical, chemical and organic/teleological - have their place. In this object of all objects each individual thing constitutes a means for the whole.

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[141] Hegel, Enzyklopädie, §205, add. "are liable to fall into trifling reflections; as, for instance, if we not merely studied the vine in respect of its well-known use for man, but proceeded to consider the cork-tree in connection with the corks which are cut from its bark to put into the wine-bottles."

[142] Hegel, Enzyklopädie, §204.

[143] In Enzyklopädie, §206, the argument is given more detail, then concluded in the later sections. The principle of teleology can be expressed in a syllogistic form. On one hand, there is purposive action (in the subject); on the other, the means for fulfilling this action (in the objects that are incorporated into the subject through assimilation). This whole process is described: stage one is the "subjective purpose", described in §207; stage two is "the end in process", described in §208; stage three is the "accomplished end", described in §210, with additions to the theme carried out in §§211-212.

[144] Hegel, Enzyklopädie, §206, add.

[145] Hegel, Enzyklopädie, §211.

Hegel views this object comprised of objects as the notion, with the concept lying concealed in it: "Nun aber ist in der Tat das Objekt an sich der Begriff, und indem derselbe, als Zweck, darin realisiert wird, so ist dies nur die Manifestation seines eigenen Inneren. Die Objektivität ist so gleichsam nur eine Hülle, unter welcher der Begriff verborgen liegt."[146] But just how does it lie concealed? Precisely in all of the forms of objectivity - i.e., in mechanical, chemical and teleological objects. In the development from one form to another each of the previous levels is maintained. So just as reason does not dispense with understanding or representation, but they continue to play an essential part in thinking, constituting an irreplaceable moment of its development, so too the various sorts of objects remain intact despite that they do not all reflect reason in its most developed form, and despite that taken together they constitute the "object of objects", which is a teleological, organic object. Those mirroring the moment of understanding are mechanical and chemical objects, those mirroring reason in its completeness are organic ones. The whole is one among these organic objects and the main one Hegel thematizes here.[147]

Texts from The Philosophy of Nature give us added reason for accepting the interpretation of the view of objects I have offered here: the various spheres of the natural philosophy are represented as expressing objects that can be dealt with according to certain logical points of view: in the sphere of free physical bodies, for example, "we enter logically into the sphere of the essence"[148] These types of bodies are able to be viewed appropriately from the perspective of reflection or understanding. So too, he later says that the oxidation process at the level of chemical interaction is "ein anfänglichen Selbstbestimmens des Begriffs aus sich in seiner Realisation...."[149] The notion makes its appearance at this level, although it will first be seen in its fulfillment in nature at the level

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[146] Hegel, Enzyklopädie, §212, add. "The object is the notion implicitly; and thus when the notion, in the shape of End, is realized in the object, we have but the manifestation of the inner nature of the object itself. Objectivity is thus, as it were, only a covering under which the notion lies concealed."

[147] This latter point helps to make sense of why he uses the singular form, "the object", in the chapter heading.

[148] Hegel, Enzyklopädie, §274, add. "... so treten wir logisch in die Sphäre des Wesens."

[149] Hegel, Enzyklopädie, §335. "In this realization of itself, the Notion displays the beginnings of a spontaneous self-determination, which is not therefore determined solely by the external conditions present."

of organic things, of which Hegel says: "Die Idee ist hiermit zur Existenz gekommen".[150] Only in the expression of nature at the organic level do we see the notion realized; first here do we see objects that reflect the level of reason. In this section he deals with the traditional objects of organics.

Hegel obviously sees the notion in nature, but as he says, also at its level of reflection or understanding: "Denn es ist Verstand in der Natur, d.h. die Formen des Verstandes existieren in ihr."[151] Essential to Hegel's treatment of objects in the logic and the natural philosophy is that each type of object in nature be treated according to the point-of-view appropriate for that sort of object. He says, "Everything can of course be treated from a chemical point of view, but everything can also be treated from a mechanical point of view....When bodies are treated at one stage, this does not exhaust the nature of other bodies however, as for example when vegetable or animal bodies are treated chemically. This division, by which each body is treated according to its particular sphere, is essential."[152]

Although Hegel here is quite explicitly arguing against a mechanistic or chemistic reductionism, he certainly implies that a biologistic one is just as much to be avoided. There are different types of bodies; and each type must be treated according to the point of view appropriate to it. Just as we should not treat plants and animals as stones, so too we should not treat stones as plants or animals. What is true of the chemical viewpoint is true of other viewpoints as well: "Der chemische Standpunkt ist gar nicht der einzige, sondern nur eine eigentümliche Sphäre, welche gar nicht das Recht hat, sich als das Wesentliche auf andere Formen auszudehnen"[153]

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[150] Hegel, Enzyklopädie, §337. This is the introduction to organic physic.

[151] Hegel, Enzyklopädie, §276, add. "In nature it is the understanding which occurs; the forms of the understanding exist within nature."

[152] Hegel, Enzyklopädie, §286, add.

[153] Hegel, Enzyklopädie, §281, add. "The chemical standpoint is certainly not the only one, it is merely one particular sphere, with no right whatever to impose itself upon other forms, as if it were their essence."

What Hegel envisions is a view of material things in which each type of thing is preserved, but in which we nonetheless see the whole (comprised of its indispensable moments). Again, just as we view idea as comprised of the levels of perception, understanding and reason, so too the idea in nature has its moments: "Nature is the idea in the element of extrinsicality, and like the understanding, it holds fast to the dispersed moments of the Notion and so expresses their reality. In higher things however, it unifies the different forms of the Notion into the highest concretion of unity."[154] The different forms are preserved at their levels of nature: only in "higher things", i.e., organic things, do all of the perspectives play a role. To adequately understand them we must understand their mechanical, chemical and teleological elements.[155] As I have already stated, it is very important to give mechanism its due and realize that it has an explanatory force for every type of being. The problem arises when one attempts to give a full explanation of things from the point of view of mechanistic understanding. There are also organic objects, with internal laws of causality: "Zweckmäßigkeit ist also nicht bloß ein Verstand, der von außen der Materie eine Form gibt"[156] The form of purposive objects is determined by the interconnection of the parts of the organism. To fully understand such objects we need invoke, not merely understanding, but also reason. Doing so we see them in their appropriate context, we see how they reflect their principles which are anchored in the logic.

Although the logical force of Hegel's argumentation here often appears wanting, and his comments seem more based on empirical observation than logical deduction, Hegel clearly is attempting to make a place in the logic for the three discussed perspectives and three kinds of objects. Having these in place, the apriori principles of the respective sciences could quite easily be deduced, and each of

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[154] Hegel, Enzyklopädie, §312.

[155] The character of the world as a whole is especially being emphasized here. And regarding this point I have essentially been arguing in line with Marcuse that "nicht "das mechanische oder chemische Verhältnis", sondern das Verhältnis zum lebendigen Subjekt macht den Charakter der "Welt" aus; sie ist wesentlich "lebendiges Dasein", die "Objektivität des Lebendigen." Hegels Ontologie, 176.

[156] Hegel, Enzyklopädie, §315, add. "This purposiveness is an act of intelligence on the part of nature itself, and consequently does not resemble the understanding in merely imposing a form on matter from without."

the respective sciences could be shown to have a real scientific status. With this, organics, which merely has the status of a "teaching" for Kant, is given a more prestigious place among the sciences; yet each of the other sciences also has its place.

The basic argumentation in this chapter thus supports the interpretation of DeVries, who summarizes Hegel's view of nature as follows: "[It] is to be understood as consisting of various stages or levels. These levels form a hierarchy, one supervening upon another, and the whole ultimately serves the self-realization of the Absolute. For each level there is a set of concepts in which the objects of that stage can be described and explained; these concepts are neither eliminable nor reducible. The empirical sciences are consequently also irreducible; each develops and applies the concepts peculiar to a particular level to describe and explain individual phenomena at that level."[157]

Further, since the organism concept is to be found in the logic, it is even clearer that Hegel's view of the organism is not merely based on an analogy with natural organisms. I shall examine this view of the organism in more detail in the following chapter. Before doing so, however, I shall finish off this chapter by taking issue with an interpretation differing from mine; namely, that of R.P. Horstmann, who argues, in contrast to me, that Hegel understands all objects as organism-like and that his organic view of objects is merely based on an analogy with plants and animals.

2.4 IS THIS JUST AN ANALOGY?

In Ontologie und Relationen Rolf P. Horstmann deals with Hegel's view of the organism at some length, indicating the important role of this for Hegel's view of objects, and arguing that Hegel views every object "in truth" as a "notion". He calls this Hegel's "logical concept of the object". But in

contrast to what I have been arguing, Horstmann maintains: 1) that each object is organic; and 2) that the organic characterization is merely analogous. He argues that Hegel does not view them as organisms in the strict conceptual sense, but merely as "organo-logical" ("organologisch"); in other words, objects must indeed be interpreted as organisms, but they are not organisms as such.

According to Horstmann, Hegel was pushed toward understanding everything organically in order to avoid a dilemma and dualism arising in Kant. Kant understands most objects as mechanistic, and only such mechanical objects as constitutive of nature. Nevertheless, a few objects are teleological (albeit if only to be understood as such for heuristic purposes). When Hegel rejected the difference between constitutive and regulative principles, he was pushed to choose between the two ways of viewing reality - either as organic or mechanistic, thinking all objects must be "structurally thought the same way" ("strukturell gleichartig gedacht werden").[158] Hegel then opted for the organic view.[159]

Kant's work is indeed plagued by a curiosity which Hegel needs to overcome: on the one hand, we do not know what things are in themselves, but only how our minds structure objects; on the other hand, mind seems to be a little bit schizophrenic because it does not organize all objects in the same manner. Some are organized mechanically, some organically. But this is not supposed to tell us anything about the things, only about our mind's structures. It is clear that Hegel wanted to overcome this. What is less clear - or not clear at all - is that he thus opts for interpreting all objects as organic in order to do so. Indeed, because he claims to be telling about how things are, not only about how our mind functions, theoretically he has no difficulty maintaining that the mind structures different things differently. It does so because there are different kinds of objects in the world.[160]

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[157] DeVries, Hegel's Theory of Mental Activity, 45-6.

[158] Rolf P. Horstmann, Ontologie und Relationen, 76.

[159] Horstmann, Ontologie und Relationen, 77-8.

[160] One can of course question whether Hegel made the right choice in rejecting regulative ideas and opting to view the categories as constitutive. Most would now prefer to view the categories as regulatively binding, as offering a sort of research program concerning first principles. This is the route taken by Apel in his "universal pragmatics", and before him by Pierce. See Apel, "Paradigma der Ersten Philosophie," 60-1.

His logic must account for all mind's structures, they showing "die Darstellung Gottes...wie er in seinem ewigen Wesen vor der Erschaffung der Natur und eins endlichen Geistes ist."[161] But we need not read it as pleading that all objects reflect all of the structures of mind and that to fully understand any object we have to see it as an organism.[162] Although every object is in the end a part of a larger system that Hegel identifies as an organic object (each object being a part of a whole) that does not make every object an organism, only a part of one. Mind can structure some things one way and some things another, because the things are different. At the very least then, Hegel did not need to think each object is structured in the same manner. And I believe analysis I have offered shows that he did not think that each was.

Another concern is Horstmann's contention that Hegel merely shows those "organic" objects to be "organistic", "organism-like",and so on.[163] In other words, Hegel's organism/organic characterization is only a metaphor: "organic" objects are like organisms. As he states it, Hegel maintains, "what an object in truth is, is in one sense organism-like, but, on the other hand, that not every object is an organism."[164] Everything is like an organism, but is not, for all that, an organism. What apparently speaks against the view that all objects are "organisms" in a stricter sense is that it is "very difficult" to find a description of an organism in which an organic view of objects does not appear either "senseless, false or trivial".[165]

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[161] Hegel, WdL, I, 33-4; Miller, 50. "this content is the exposition of God as he is in his eternal essence before the creation of nature and a finite mind." This need not lead us to accept a hard reading of Jacques D´Hondt's view that, "L´Idée précède logiquement et ontologiquement la réalité naturelle observable, à tous ses niveaux." Insofar as this means the idea is necessary for the human construction of reality there is no problem; if, however, one means that the idea temporaly precedes the existence of material things the issue is quite another. (See Jacques D´Hondt "Le Concept de la Vie, chez Hegel", 139.)

[162] Indeed to do so might be foolhardy. Hegel also introduces various syllogistic forms in his logic, without thinking that we necessarily look at each fact in the world through the lenses of every possible syllogism.

[163] Horstmann, Ontologie und Relationen, 80.

[164] Horstmann, Ontologie und Relationen, 80-4. "daß alles das, was Objekt, in Wahrheit ist, auch organismusartig in einem ... Sinne ist, anderseits behauptet, daß nicht jedes Objekt ein Organismus ist".

[165] Horstmann, Ontologie und Relationen, 84.

Horstmann argues that many objects ("Gegenstände") from the Philosophy of Nature could not possibly be described with a plausible definition of organism.[166] (There he is absolutely correct.) Further, each definition of the organism suffers from a lack of clarity.[167] And with so much speaking against it, it is not clear why one would find the harder, non-analogous view attractive. All this should speak for the thesis that Hegel merely characterizes objects in reference to the structure of conscious life.[168]

Hostmann's impulses to argue that this is based on a mere analogy are certainly stronger because of interpreting every object as an organism. I argue here, in contrast, that most objects are not organic, but that those outside of the plant and animal kingdoms that are characterized as organic are not just being so viewed on the basis of an analogy. While Horstmann does not say that none of these other organic objects could not be viewed as organisms in a non-metaphorical sense, he does nothing to suggest that they could be. He also misconstrues Hegel's actual view of the organism.

Although Horstmann's discussion in this work does much to enlighten motives behind Hegel's desire to include the organism concept in the logic, Hegel's texts themselves do not support his further-developed arguments - neither that all objects are to be understood organically, nor that those non-biological ones which are so characterized are merely organism-like. While Horstmann is very careful to speak of objects as "organism-like", Hegel very often fails to do so. The texts I have examined here certainly do not make these sort of qualifications, nor do those where Hegel speaks of the state organism or a geological organism. And curiously, Horstmann fails to consider the views of organism offered by Hegel himself in the latter parts of the logic.

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[166] Horstmann, Ontologie und Relationen, 84.
[167] Horstmann, Ontologie und Relationen, 85.
[168] Horstmann, Ontologie und Relationen, 84-5.

Further, Hegel's general philosophical approach makes it plausible that he first defines the organism in the logic, and only later applies it to the fields of biology, politics, etc. And while he may not be successful at this pure deduction of the organism concept – for he falls again and again into biological comparisons that cloud what he is trying to say, and his deductions certainly have failed to convince a lot of people –, the method of the entire logic strongly suggests that this is what he is trying to do here; i.e., to deduce yet another concept to be applied later. Horstmann's approach, I would suggest, does just the opposite of what Hegel tries to do. He looks for a biological view of organism that makes sense in the logic, rather than approaching things the other way around.

But Hegel is not an empiricist who looks at plants and animals, then says that states and scientific systems are to be compared merely analogously with these. Instead, he tries to show three ways that we structure objects: as mechanical, as chemical and as organic. He then points to various things in the world that reflect each of these organizational schemes arguing that states, the geological world, plants and animals as well as the idea as a whole are organic objects.

Were one to follow Horstmann's lead here one would find other difficulties: much of the last part of the logic might well have to be interpreted merely metaphorically, for neither does it fit with our common understanding of things to view "living beings", or as "life" as anything more than metaphors; yet there can be no doubt that these are concepts of the logic. Further, if we were to continue along these lines, then we would be struck with the oddity of seeing Hegel forced to move toward the language of imagery exactly at the point where thought should be most determined; the language of imagination would surpass that of conceptualization, and it sounds as though art in the end really must surpass philosophy for Hegel. But this is hardly a conclusion that Hegel would embrace, although we shall see that art can serve philosophy by making abstract conceptualization easier to understand.

2.41 HEGEL ON METAPHOR

The interpretation set forth here is strengthened by Hegel's own views on metaphor; from his treatment it is clear that he would by no means view his organicist language as metaphoric. Hegel discusses metaphor explicitly in the Vorlesungen über die Ästhetik, where it is treated as one type of comparison - part of "Die Bewußte Symbolik der Vergleichenden Kunstform". Here, in part, Hegel takes up the Aristotelian view that metaphor is a comparison where in Hegel's words, "an 'as' is added".[169] Here he broadly assumes the view put forth in Aristotle's Rhetoric, where a marginal note is merely made that in metaphor the comparative term is specifically marked by the term "is like".[170] But as we will see, Hegel then sets up more qualifications for a metaphor than Aristotle did.

Aristotle's more thorough treatment is in the Poetics where he notes simply, "Metaphor consists in giving the thing a name that belongs to something else; the transference being either from genus to species, or from species to genus, or from species to species, or on grounds of analogy".[171] In fact, Hegel seems only to accept part of this traditional view. Other parts of Aristotle's definition here would be included as other sorts of comparisons. What is specific to a metaphor for Hegel is a conscious use of pictures or images to communicate meanings. There are other types of comparisons than metaphors, and some of Aristotle's likeness relationships shall be included under them. Specifically, an equation ("Gleichnis") presents an explicit comparison of meanings - so a comparison would be possible here between two concepts, also using a likeness such as "an idea is like an image". Here one doesn't have a tactile image, but a comparison of concepts in which it is simply maintained that one is like the other.[172] For Hegel, the metaphor presents a picture rather

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[169] Hegel, Werke vol. 13, 517.
[170] For a discussion of this see Paul Ricoeur, Interpretation Theory, 47.
[171] Quoted in Ricoeur, Interpretation Theory, 47. See Aristotle, Poetics, XXI, 4.
[172] Hegel, Werke, vol. 13, 526-7.

than an explicit meaning; it simply does so in a context in which it is clear that the image presented has a specific meaning that is not explicit in the image itself.[173]

In certain respects Hegel's treatment thus differs from Aristotle's; despite his seeming approval that a metaphor establishes a likeness between two or more objects, he goes on to more specifically limit the definition in ways that Aristotle does not.[174] But, like Aristotle, he then looks to the uses of metaphor, noting first of all that metaphors possess greater liveliness ("eine größere Lebhaftigkeit") than typical comparisons. Here he hints at the persuasive power that metaphors wield, as Aristotle certainly does by including it in his Rhetoric under various means used to sway opinion. Having a "greater liveliness" we can assume that it would wield persuasive power. The various reasons he offers for metaphor include: the mind's dissatisfaction with differences, in general - so there is a natural desire to want to unite what is separate when their are occasions for it.[175] The passion for beauty ("Leidenscahft zur Schönheit") is also sated by this. One can present more beautiful expressions of ideas through metaphors than in mere dry comparisons. Desire for fantasy ("Lust der Phantasie") also plays a role. None of these reasons explicitly state the rhetorical uses of metaphor, but these do seem to suggest themselves clearly enough. Given that we would all be subject to these same tendencies of mind, and that we find it more beautiful and lively than other types of comparison, it would stand to reason that this increases the persuasive power of comparisons (though not the power to convince).[176]

What he drives home in this treatment is that comparisons can be made clearer through the use of metaphor than they are without it. It is an interesting case here, because the power of imagination,

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[173] Hegel, Werke, vol. 13, 516-8.

[174] In his treatment, he also notes that every language has numerous metaphors - a thought that might have lead him to question whether there could be something like a category list of "universal" metaphors, i.e., metaphors that are to be found in every language. He does not ask this question though.

[175] Here we see an interesting autobiographical view. Is mind really so dissatisfied with disunity, or is it merely Hegel's mind that is?

[176] Hegel, Werke, vol. 13, 520-3.

which is a "lower" power than that of thinking, nonetheless serves thinking in some cases. Its "Bildlichkeit zwar häufig ein Verhältnis in sich schließen kann, das glücklich eine zugleich anschauliche Klarheit und höhere Bestimmtheit in den Ausdruck hereinbringt..."[177] It is important here that Hegel himself focuses on the pictorial quality ("Bildlichkeit") of metaphors. And this would rule out considering his statements about an organism to be metaphoric according to his own definitions, for they do not really call up a mental picture. Instead, they would be subsumed under what Hegel calls an equation ("Gleichung") were they to represent a mere comparison at all. In a "Gleichung" two explicit concepts can be compared with one another. It lacks the pictorial quality of a metaphor.

Yet, even if we question the adequacy of Hegel's treatment of metaphor and comparison – which we might well do – we would still be hard pressed to view Hegel's conceptual usage here as metaphorical since, in key texts, he does not refer to these various conceptual unities as organism-like, but as organisms.

Hegel does, however, invoke metaphors of specific organisms in his writing. At the end of his treatment of metaphors he discusses a metaphor and a view of metaphors instructive for our purposes. There he speaks of the use of metaphors in Schiller's writings, which allow Schiller to present a view of thinking without explicitly treating it. "Da sieht und findet denn die in sich vernünftige spekulative Einheit ihr Gegenbild an dem vorhandenen Leben."[178] The metaphors of living things offer themselves as mirror images of speculative unities. This is exactly this type of metaphor that so often comes up in Hegel; but it must not, for that reason, be confused with his view of the "organism" as a concept. Hegel can have both. When Hegel speaks of the idea as a "tree", then

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[177] Hegel, Werke, vol. 13, 520. "Having a pictorial quality can often imply a relationship that fortunately at the same time brings a perceptible clarity and a greater determination to expression" (trans. DPA).
[178] Hegel, Werke, vol. 13, 523. "The implicitly rational-speculative unity thus seeks and finds its image in existent life" (trans. DPA).

he is using a metaphor - according to his own definitions. But it is another matter when he speaks of systems, not as organism-like, but as organisms.

I would suggest then that the various systems Hegel treats as conceptual unities are defined as organisms, and that he sometimes uses metaphors to natural living things to make his definition sharper. So, he compares the history of philosophy with a tree or other plant. In these latter cases we must view Hegel's imagery as metaphoric. In using an image it meets the qualification necessitated by Hegel himself, serving to clarify the idea through that. When reflecting on the word, one might inevitably start to think about specific examples from nature - an oak, a rose, etc. These further reflections which actively employ the imagination to clarify what an organism is would then fit Hegel's criteria of a metaphor.

But while Hegel often discusses these concepts (idea, philosophy, state, etc.) with the use of specific images from nature, he does not stop there. He does not say merely that the "objectivity of the living individual" is like an organism, but that it is one. Similarly with the state, the system of the history of philosophy and various other systems discussed. Such systems are organically structured, self-related wholes in which the parts are mutually ends and means.

In this chapter I have shown how Hegel has attempted to lay the apriori basis for the disciplines of mechanics, chemistry and organics. Hegel does not view all objects as organic. He does, however, view some objects outside the plant and animal kingdoms as organic. In characterizing them as such he is not making a mere analogy; instead, he is applying the concept developed in his logic. In the next chapter I shall offer a deeper discussion of this concept. In explicating the idea as an organism he notes that it has the concept as its substance. It is like a soul unified with a body, and it entails the processes of "shape", "assimilation", and "reproduction".

CHAPTER THREE

THE ORGANIC IDEA

CHAPTER BACKGROUND

In this chapter I shall explore Hegel's discussion of the "living individual" in the logic, showing how he develops his view of the organism in the context of explicating that concept. Though this part of the logic is infamously difficult, it is essential for understanding this thematic. The texts here clearly demonstrate Hegel's critical appropriation of Kant: first, his characterization of the organism there reiterates all the main themes of Kant's view of teleology from the Critique of Judgment; second, his explication of the idea as organic can be fruitfully read as a development of Kant's view that the Architectonic of reason is organic. Unlike Kant, however, Hegel does not think that this organic characterization merely serves as a heuristic principle, but that it is descriptive of the nature of the idea; further, he describes the idea as a unity of opposites, showing another difference from Kant. He also indicates, at least in his applications, that what he says of the idea as a whole is true of other organic wholes. Finally, he incorporates views of Aristotle, showing the idea as a whole to have the active and passive aspects that Aristotle indicates the "Nous" to have. In Hegel's terminology, this is the difference between sleeping and awakened soul. The "all present soul" lays in waiting, to be reflected upon. When reflected upon, it is woken from its sleep. This awakened soul can also then be viewed as united with a body. Such an organism has then the three processes widely discussed in the natural scientific literature of Hegel's day: it has a form, assimilation and generation.

3.1 THE ORGANISM DESCRIPTION IN THE SCIENCE OF THE LOGIC

The section on “life” in the Science of the Logic offers a very useful description of the organism in the nexus of Hegel’s treatment of “the living individual”. Hegel maintains that the “living individual” is an organism and goes on to clarify what makes it one:

> Diese Objektivität des Lebendigen ist Organismus: sie ist das Mittel und Werkzeug des Zwecks, vollkommen zweckmäßig, da der Begriff ihre Substanz ausmacht; aber deswegen ist

> dieses Mittel und Werkzeug selbst der ausgeführte Zweck, in welchem der subjektive Zweck insofern unmittelbar mit sich selbst zusammengeschlossen ist.[179]

This short description of the "living individual" contains a concise formulation of Hegel's view of the organism. Indeed, Hegel's description here is best read as a paraphrase and addition to Kant's explicit definition of an organism, it repeating the essential characteristics of Kant's view.

Directly after Hegel notes that "this objectivity of the living being" is "organism", i.e., directly after the semicolon, he describes an organism more fully, saying that this organic "living individual" is "the means and tool of purpose, fully purposeful." But more than offering a mere synonym for the organism here, he also explains why it is such a means and purpose. What essentially makes it so is that it "has the notion as its substance." So the first quality mentioned in this phrase (being a means and tool of purpose) exists because of the last one (having the notion as its substance). An organism is portrayed as a self-related whole, having the notion for its substance. Or put in the plural: those things which have the notion as their substance and are purposeful - indeed, fully purposeful - are organisms.

Up to this point I think that this phrase could indeed be succinctly rendered as follows: Because the notion constitutes its substance, this objectivity of the living individual is the means and tool of the purpose, fully purposeful. In short it is an organism. What makes the "objective" living individual an organism is that it has the notion for its substance. The other two phrases til the end of the sentence offer a conclusion to the first half, the first part of which can be rendered as follows: because the concept constitutes the substance, this means and tool is itself the fulfilled purpose. What is a means is also an end. And finally there is a qualifier about this purpose, this unification

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[179] Hegel, WdL, III, 218; Miller, 766. "This objectivity of the living being is the organism; it is the means and instrument of the end, perfect in its purposiveness since the Notion constitutes its substance; but for that very reason this means and instrument is itself the realized end, in which the subjective end is thus immediately brought into unity with itself. In respect of its extemality the organism is a manifold, not of parts but of members." My argument implies that Miller inappropriately translates "the living being as the organism".

of ends and means: in it, the subjective purpose is brought into unity with itself - and indeed immediately brought into self-unity "insofar" as this means is at the same time the fulfilled purpose.

With this Hegel seems clearly enough to think that those things with the concept as their substance are organisms. At the very least we can say that the objective "living individual" is one such organic thing. Such organisms make their means to their ends; they are also self-related.

3.2 THE KANTIAN ROOTS OF HEGEL'S GENERAL VIEW OF AN ORGANISM

Much of this does not differ in essence from Kant's concise formulations of natural organisms in the Critique of Judgement. Indeed it can be seen a reformulating the ideas: "In einem solchen Produkte der Natur wird ein jeder Teil, so, wie er nur durch alle übrige da ist, auch als um der ändern und des Ganzen willen existierend, d.h. als Werkzeug (Organ) gedacht."[180] Kant's language use parallels Hegel's closely, or, viewed historically, vice versa. Each part is thought to exist as a means for the whole, as a tool. This text is worth noting simply for the tool analogy present in it, found again in Hegel. Both Hegel and Kant view the "organs" comprising the '"organism" as tools. These parts exist for the sake of the whole, in a reciprocal relationship with it. Kant's definition of the organism - and he does explicitly call it a definition - makes this point even clearer, however: "Ein

[180] KuK, B 292, §65. "In such a product of nature, every part not only exists by means of the other parts, but is thought as existing for the sake of the others and the whole – that is as an (organic) instrument." Pinkard argues that Hegel views Kant's discussion of teleology in the third critique to be a continuation of the subject matter dealt with in the third antinomy (between freedom and necessity). See Pinkard, Hegel's Dialectic, The Explanation of Possibility, 88. This is then to be taken into consideration in interpreting Hegel's statement that teleology is the truth of mechanism. (See WdL II, 384, Miller, 734.)

organisiertes Produkt der Natur ist das, in welchem alles Zweck und wechselseitig auch Mittel ist. Nichts in ihm ist umsonst, zwecklos, oder einem blinden Naturmechanismus zuzuschreiben."[181]

Kant, like Hegel after him, defines organized beings as fully purposeful. "Nothing in them is without purpose." Similarly, his definition depicts the organism as a self-related whole as does Hegel's. The whole and parts serve each other mutually as means and ends. Indeed, the parallels make Hegel's indebtedness to Kant very clear.

Hegel praises Kant in numerous texts for his understanding of inner teleology and of the organism. In the text under question, though, he adds one point to Kant's definition: namely, he offers a reason that such an organism is fully purposeful; i.e., because the concept constitutes its substance. It thus seems that Hegel has offered what he considers an improvement of Kant's definition, explaining not only what the structure of an organism is, but also why it is what it is. Because Hegel's addition to Kant's view here consists in this point I shall now turn to an explanation of what it means to have the concept as substance; and because he describes the living individual as an example of this, I shall then explore his view of a "living being".[182]

However, because of the parallel to Hegel one final point here is in order: although Kant for the most part has natural organism in mind, he actually defines "an organized product of nature" in his statement; and he implies in other texts that animals and plants are not the only such organically organized products. Among other things, Kant clearly sees the idea as an organic whole, as well as various scientific systems, as is clear from his statements about the Architectonic:

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[181] KuK, B 296; §66. "The principle, which is at the same time a definition, is as follows: An organized product of nature is one in which every part is reciprocally purpose [end] and means. In it nothing is vain, without purpose, or to be ascribed to a blind mechanism of nature."

[182] Even here though, as can be seen below in Kant's characterization of the Architechtonic, Kant does give hints that the "concept" is the unifying force of that organic whole.

> Ich verstehe unter einer Architektonik die Kunst der Systeme. Weil die systematische Einheit dasjenige ist, was gemeine Erkenntnis allererst zur Wissenschaft, d.i. aus einem bloßen Aggregat derselben ein System macht... Unter der Regierung der Vernunft dürfen unsere Erkenntnisse überhaupt keine Rhapsodie, sondern sie müssen ein System ausmachen, in welchem sie allein die wesentlichen Zwecke derselben unterstützen und befördern können. Ich verstehe aber unter einem Systeme die Einheit der mannigfaltigen Erkenntnisse unter einer Idee. Diese ist der Vernunftbegriff von der Form eines Ganzen, sofern durch denselben der Umfang des Mannigfaltigen sowohl, als die Stelle der Teile untereinander, a priori bestimmt wird. Der szientifische Vernunftbegriffenthält also den Zweck und die Form des Ganzen, das mit demselben kongruiert. Die Einheit des Zwecks, worauf sich alle Teile und in der Idee desselben auch unter einander beziehen, macht, daß ein jeder Teil bei der Kenntnis der übrigen vermißt werden kann, und keine zufällige Hinzusetzung, oder unbestimmte Größe der Vollkommenheit, die nicht ihre a priori bestimmten Grenzen habe, stattfindet. Das Ganze ist also gegliedert (articulatio) und nicht gehäuft (coacervatio), es kann zwar innerlich (per intus susceptionem), aber nicht äußerlich (per appositionem) wachsen, wie ein tierischer Körper, dessen Wachstum kein Glied hinzusetzt, sondern, ohne Veränderung der Proportion, ein jedes zu seinen Zwecken stärker und tüchtiger macht.[183]

Kant's teleological heuristic principle (here used for organizing knowledge into a whole, characterized as a rationally organized whole, "like an animal body") became for Hegel a constitutive logical principle descriptive of an wide array of objects, including natural organisms, but also various systems, the system of philosophy and the idea as a whole, to name but a few. Hegel clearly found inspiration for a general organic view in Kant. For Hegel, like Kant, the idea clearly constitutes such a living unity. Indeed, the issue of Kant's Architectonic can more or less be equated with the organic whole Hegel is dealing with in the last section of his logic. But this idea of reason, which Kant posits

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[183] Kant, KrV, B860-61. "By an architectonic I understand the art of constructing systems. As systematic unity is what first raises ordinary knowledge to the rank of science, that is, makes a system out of a mere aggregate of knowledge....In accordance with reason's legislative prescriptions, our diverse modes of knowledge must not be permitted to be a mere rhapsody, but must form a system. Only so can they further the essential ends of reason. By a system I understand the unity of the manifold modes of knowledge under one idea. This idea is the concept provided by reason – of the form of the whole – in so far as the concept determines a priori not only the scope of its manifold content, but also the positions which the parts occupy relatively to one another. The scientific concept of reason contains, therefore, the end and the form of that whole which is congruent with this requirement. The unity of the end to which all the parts relate and in the idea of which they all stand in relation to one another, makes it possible for us to determine from our knowledge of the other parts whether any part be missing, and to prevent any arbitrary addition, or in respect of its completeness any indeterminateness that does not conform to the limits which are thus determined a priori. The whole is thus an organized unity (articulatio), and not an aggregate (coacervatio). It may grow from within (per intussusceptionem), but not by external addition (per appositionem). It is thus like an animal body, the growth of which is not by the addition of a new member, but by the rendering of each member, without change of proportion, stronger and more effective for its purposes."

as a principle of rational faith to unify reason, loses its lower, secondary status. What served Kant as a mere regulative principle becomes in Hegel a constitutive one.[184] For both Hegel and Kant, though, it allowed more than merely a clarification of natural organisms.

3.3 THE CONCEPT AS SUBSTANCE

To once again restate the kernel defining characteristic of the organism so far outlined: the concept ("Begriff") constitutes its substance. But because this statement has an uncanny resemblance to the view of substance presented at the conclusion of the treatment of reality ("Wirklichkeit") in the Logic I shall briefly examine that statement. There Hegel writes: "...die Wahrheit der Substanz ist der Begriff."[185]

Given this text, one question to naturally enough arise is: would Hegel equivocate the concepts "organism" and "the truth of substance", for after all the "substance" of the organism is also "the concept", as is "substance" in its "truth"? But there are numerous difficulties in interpreting the aforementioned texts. Among them, the "concept" itself has numerous "moments" or "levels", so it can be understood in manifold ways. Is "the truth of substance" perhaps the concept in its underdeveloped form, and the organism the concept in its developed form? Or a further: does Hegel use the term "substance" in a uniform manner. Is Hegel talking about all individual substances in this

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[184] With Kant's use of regulative ideas he tried to legitimize the belief in various systems: for example, rational psychology, rational cosmology, transcendental theology. While these were not to be considered genuine sciences, they were considered legitimate (rational) principles of faith. See McFarland, Kant's Concept of Teleology, 26. In his architectonic he argues that the form of all knowledge constitutes a system which determines that place of other forms of knowledge within it and that it does so apriori. (See also KrV, B391.) The organic whole of knowledge under discussion here is unique among the regulative ideas in that it applies to all knowledge, without exception. All knowledge fits into this whole. Other regulative ideas deal with only knowledge from specific areas and do not apply so broadly. Containing teleology, however, it is regulative: "Teleology" as Kant tells us, "is intended to aid us merely in completing the unity of nature in accordance with universal laws" (S. KrV, B720). Kant did clearly see all scientific disciplines united in an organic whole, as is evidenced in other texts as well. Compare: the "unity of manifold modes of knowledge under one idea" make it "like an animal body" (KrV, 860-1).

[185] Hegel, Enzyklopädie, §158. "The truth of substance is the Notion."

section or merely that substance which he later identifies with subject? While it may at first appear that having the concept as the substance is the same as being the substance in truth and that this would imply that "the organism is the truth of substance", it is not so simple. For we must clarify what substance is, and which one(s) he is talking about. Could this imply that every substance is an organism after all? Is every substance a potentially true substance? Although Hegel lacks general clarity on these points, I shall argue that we are best served by seeing Hegel's views of organized substances here primarily as reflecting his view of the general substance (the Spinozean whole) which he views in its completion as "subject".

"Relationship of substantiality" is the first section of Hegel's section on "Reality" ("Wirklichkeit"), which is for its part the last section of the "Logic of Essence". The relationship of substantiality is that between things as wholes and their accidents as parts.[186] The substance is the "totality of accidents". Hegel understands it as the process of defining a grouping of characteristics or qualities as a whole, the act of defining a whole or basically the act of giving it a form. Hegel calls it "die absolute Formtätigkeit". Substantiality consists in this activity of giving form to a thing, of making a substance out of it that includes accidents as its parts.[187] And in this, a causal relationship between the parts and the whole is posited. On the one hand, the substance is the cause of the accidents; on the other, it is their effect. So we do indeed see the reciprocity also emphasized in Hegel's organism concept.

The substance is a cause in that it holds the accidents together in itself. It is basically a principle of identity: all the accidents belong together in it, and without it one would have merely disconnected impressions. In a play on words Hegel calls it a cause ("Ursache") and the "original thing"

[186] Hegel, Enzyklopädie, §150.
[187] Hegel, Enzyklopädie, §151.

("ursprüngliche Sache").[188] Without it, the accidents would not exist as attributes of something; yet, at the same time, it would not exist without the accidents, for the accidents constitute it as it is.

So it is that Hegel offers the following two descriptions. First, the substance as cause cannot be understood apart from the accidents that it causes because "in der Wirkung ist erst die Ursache wirklich und Ursache."[189] Secondly, the content of the accidents and finite causes are one and the same: "der Regen, die Ursache, und die Nässe, die Wirkung, sind ein und dasselbe existierende Wasser."[190] Seeing the causes and accidents as separate is one necessary step in the reasoning process; but they must also be seen as identical.[191] "Die in der Wechselwirkung als unterschieden festgehaltenen Bestimmungen sind a) an sich dasselbe; die eine Seite ist Ursache, ursprünglich, aktiv, passiv usf. wie die andere."[192] Both the accidents and the substance serve as causes, both are active, both are passive, each from different perspectives; and this is not only true from the point of view of reflection, i.e. of the things in-themselves, but also from the point of view of reason, i.e. of the things for-themselves.[193] The independence of each of these moments - of the accidents and substance - exists within one and the same substance in inter-dependence. It is a difference within one thing, a difference within a self-related whole.[194]

Hegel appears to be saying that because this self-related whole conceptual, the substance is in truth the concept.[195] Those things so constituted - with inextricably related parts - are realized substances. But are we then to understand each substance to be realized, thus to be an organism after all? In the

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[188] Hegel, Enzyklopädie, §153.
[189] Hegel, Enzyklopädie, §153, p. 298. "it is in the effect that the cause first becomes actual and a cause."
[190] Hegel, Enzyklopädie, §153, p. 298. "The rain (the cause) and the wet (the effect) are the self-same existing water."
[191] Hegel, Enzyklopädie, §153, add. p. 299.
[192] Hegel, Enzyklopädie, §155, p.300-1. "The characteristics which in Reciprocal Action are retained as distinct are (a) potentially the same. The one side is a cause, is primary, active, passive, etc., just as the other is."
[193] Hegel, Enzyklopädie, §156.
[194] Hegel, Enzyklopädie, §157.
[195] Hegel, Enzyklopädie, §158.

realized substance each of the parts is integral for understanding the whole, and the whole is necessary for understanding that the parts belong together, constituting one thing? Hegel certainly is not clear here. Does he perhaps contradict himself, here arguing that all substances are indeed "organic", despite what he says elsewhere? While some of his examples here make it questionable (and it may be that he had unresolved tensions about this in his thought), above all, the substance that Hegel here has in mind is the Spinozan-like substance, i.e., that set of all sets. Hegel here identifies it however with the "I", the "free mind".[196] This substance is the human mind, which is constituted by all of the moments comprising the logic (and indeed the entire system of Hegel's philosophy). This is certainly such a realized substance. This "substance" is also "subject".

But Hegel's discussion in the section on objects shows that he does not think that all objects are like this. Further, he indicates quite clearly at the beginning of the "Logic of the Notion" that he does not think that all objects correspond to the level of the concept: "In der Natur ist es das organische Leben, welches der Stufe des Begriffs entspricht."[197] Other objects correspond with other moments in the development of the substance, but not with the developed substance. When Hegel says that the organism (or in the case at hand, the living individual) has the concept as its substance, he means that this organism is such a developed substance. (In those places where Hegel says the truth of things is in their concept, he once again seems to mean that we must view those things in the context of the idea as a whole, not that they are not mechanical or chemical objects.) Fulfilled substances and other such developed substances are fully self-related wholes, with their parts functionally serving purposes. But not all objects are such developed substances. In short, not all objects are organisms, having the concept as their substance. One that does, however, is the living being. I shall now turn to examine Hegel's statements about it, in which he develops his organism concept still further.

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[196] Hegel, Enzyklopädie, §159.

[197] Hegel, Enzyklopädie, §161, add, p. 309. "In the world of nature it is organic life that corresponds to the grade of the notion."

3.4 OBJECTIVITY REVISTED

Because the "objectivity of the living individual" is described as "organism" I shall examine Hegel's view of the living being ("Lebendigen") in general, and show how this relates to his view of objectivity. I shall thus examine in some detail the section of Hegel's logic entitled "the living individual": there Hegel describes the organism with the help of three processes from the natural sciences: form, assimilation and reproduction.

Hegel has just discussed three types of objects - the mechanical, chemical and teleological objects - and it makes sense that Hegel would here claim that the living individual is neither a mechanical nor a chemical object, but that it is an organic one. [198] The remaining part of the sentence then describes why it is an organism. He does very little there than place the discussion in the context of his previous explanation presented in the section on teleological objects.[199]

Seeing this as relating to his earlier discussion also makes sense of the comments following the above quote: "Nach der Äußerlichkeit des Organismus ist er ein Vielfaches nicht von Teilen, sondern von Gliedern, welche als solche a) nur in der Individualität bestehen; sie sind trennbar, insofern sie Äußerlichkeit gefaßt werden können; aber insofern sie getrennt werden, kehren sie unter die mechanischen und chemischen Verhältnisse der gemeinen Objektivität zurück."[200]

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[198] As Marcuse notes, subjectivity is not really the opposite of objectivity; it is rather a moment of it. The human subject does not grasp the objectivity. Instead, grasping something is an action of objectivity itself (133). Of course, it may be misleading to phrase things this way: given that the process is a dialectic one, the moment can indeed at the same time be the opposite. The whole is a unity of opposing moments.

[199] While Hösle wants to distinguish between a teleological and an organic object, it seems to me you will be hard pressed to find one which is not also the other, unless one interprets Hegel as arguing that there is only one organic object – i.e., the idea. The obvious problem with this is that it again runs counter to Hegel's use of organic language throughout his writings, in which he often applies the very concepts used to explain the idea in his logic.

[200] Hegel, WdL, III, 218; Miller, 766. "In respect of its externality the organism is a manifold, not of parts but of members. These members, as such, a) subsist only in the individuality; and so far as they are external and can be

The living individual under discussion here, the idea as a whole in which the parts mutually support each other, is such an internally connected whole. For Hegel as for Aristotle, should a part be disconnected, it loses is organic quality. Viewing it from the point of view of understanding alone, we will partially understand it, viewing its parts under their mechanical and chemical aspects, which it can still be understood with when disconnected. But we will only completely understand it as a functioning whole when we view it from the organic point-of-view, and thus see its parts as interconnected. Here Hegel has in mind the other sort of objects integrated into the idea. We see them correctly as the moments of the idea they are part of, as members of that idea. We view them then as a part of the organism. We shall thus now turn to the task of explicating more specifically this particular organic idea, as it is an important example of the organism concept under discussion.

3.5 THE CATEGORIES "LIFE"/"LIVING INDIVIDUAL" AND THE NATURAL WORLD

What is the "living individual"? And why is it thematized in the logic?[201] Hegel notes the difficulty associated with a logical treatment of "life" in his opening paragraph, indeed, in the opening sentence of this section.[202] And what he says of life applies equally well to the "living individual". The idea of the living individual, like that of life, seems to be an object that has "overstepped the bounds" of the logic itself. The difficulty is that "life" is a category of the applied logic and does not seem to

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apprehended in this externality, they are separable; but when separated they revert to the mechanical and chemical relationships of common objectivity."

[201] Hösle notes the rejection of this category by numerous Hegelian-inspired logicians, including Rosenkranz, who view it as a posteriori only and inadmissible in an apriori deduction. Hösle, however, argues that the category is necessary if Hegel is to claim that his apriori structure applies to all of reality. See Hösle, Hegels System, 243-246. Rosenkranz notes that we also speak of warm and cold feelings, the fires of our fantasy, the attraction of the theater, and asks sarcastically if we should not include these too in our list of categories.

[202] McTaggart also argues that in his treatment of life Hegel oversteps the bounds of logic. He also thinks Hegel is led to several errors because of it: being misled by his comparison with biology, according to McTaggart, he conceives of the universe as a plurality of organisms, and he fails to see the larger whole as an organism. Just as biologists do not view separate organisms as unified in a larger whole, neither does Hegel the plurality of organisms as united in a super-

belong directly to the field of logic, which is perceived as including an explication of forms of thought ("Gedankenformen"). But this paradox is easily enough overcome, according to Hegel, because "life" also belongs to the conceptual schema necessary for observing the applicable part.[203]

Two different uses of the terms "life" and "living individual" must be kept straight: on the one hand, Hegel writes about the concepts of "life" and "the living individual" (i.e., about them as conceptual objects); on the other hand, he writes about them as existing in nature. Obviously what he is considering in the logic are the concepts. As "ideas" they are formally separable from "life" and "living individuals" in nature.

Hegel's various conceptualizations of life and the living individual emphasize various aspects of that idea. But in each case he indicates that he is not dealing with particular things, but with the idea as a whole. We can view it as roughly the same organic idea treated by Kant in his Architectonic or Aristotle in his teaching of the "Nous". He states that it is: 1) "immediate"; 2) "suitable to objectivity"; 3) "all-present soul", 4) a "unified connection". In treating the living individual in this way he is not dealing with the idea of individual subjects, but with the idea in general, which he views as a unity with difference. I shall now look at these various characterizations of the idea as a whole.

3.6 THE IDEA OF LIFE AS MEDIATED IMMEDIATENESS ("VERMITTELTE UNMITTELBARKEIT")

Hegel characterizes "life" as the idea that is always already "presupposed", or as "immediate".[204] Roughly put, "life" consists of things in the world, conceived as still unfiltered through our

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organism. See, Commentary, 275-76. McTaggart seems to me blatantly mistaken in not viewing the greater whole as an organism.

[203] Hegel, WdL, III, 212.

[204] That it is "presupposed" could have various possible meanings, a couple of which I shall mention here. First, it could plainly and simply mean that thinkers who write about categories of pure conception (including the category of life) are themselves always first living; so life is somehow presupposed. This would help substantiate the view that

epistemological apparatus, presupposed as separate from the subjects who think about the world. We, who think and experience our reality through thought, presuppose that there is something separate from us that we assimilate through thinking. Yet, this too involves us in a paradox: on the one hand, we view "life" as immediate, separate from us who think it; on the other hand, that we perceive life as immediate means that it is in some way already mediated ("vermittelt"). In other words, it is thought to be immediate; but precisely because it is thought, we must recognize it to be mediated, for thinking is mediating. Hegel refers to it as mediated immediateness ("vermittelte Unmittelbarkeit"). "Life" is the idea of the material world, which supplies our ideas with content;[205] and it is here still contrasted in some cases with the thinking subjects who employ categories. The living being ("das Lebendige") is specifically characterized as the "immediateness of the idea"; it is "life" as "immediateness","life" at its lowest moment.[206] This is the first level of "life".[207] As shall be made clear, this also mirrors Hegel's ideas from his early writings.

Hegel is not the sort of idealist he is often thought to be; he does not think that the idea preexists materially in time, but instead that one must first exist before one thinks. As a rule, though, Hegel uses the word "presuppose" just like you and I: so he might mean that we use categories that we often simply take for granted, if we have not taken the time and trouble to evaluate our knowing process. He often criticizes natural scientists, such as Newton, for presupposing a metaphysic that they have not examined. According to Hegel there is no viewing the material world without the conceptual apparatus Hegel attempts to deduce in his logic. And indeed the category of life is among the categories used when viewing living things in nature. But this is not all that Hegel means.

[205] It is not thus to be confused with a sort of material cause, for the individual living things that are presupposed have form as well as matter.

[206] Michael Theunissen offers a thorough treatment of "immediateness" in Sein und Schein, pointing out that with the expression immediateness Hegel often indicates "die Vorstellung der Seinheit oder Gegebenheit vorgefundenen Inhalte". Hegel treats "being" as immediate at the beginning of the Logic because of this characteristic - as the empty form ("Gestalt") that can be sensed, but not thought. (S. Michael Theunissen, Sein und Schein, 335; from Hegel, WdL II, 10.) Hegel also identifies the "Unmittelbarkeit des Daseins" with "Vorgegebenheit" - roughly translatable with "state of being pre-existing" or something like, "being given, or present, beforehand" (Theunissen, Sein und Schein, 359).

In connection with this we sometimes find it identified with that which is sensed before being processed by thought. So Hegel says in Die Vorlesungen über die Ästhetik: "Erst jenseits der Unmittelbarkeit des Empfindens und der äußerlichen Gegenstände ist die echte Wirklichkeit zu finden"(Hegel, Vorlesungen über die Ästhetik, vol. 13, 22). Objects that are merely sensed are thus thought to be immediate; and in this state of immediacy they do not express reality in Hegel's sense. This latter is the case because Hegel identifies reality ("Wirklichkeit") with thought reality. Being felt or perceived is thus not the same as being mediated. In feeling and perceiving we get a sense of a thing's immediate, pre-existing (or "vorgefunden") character. But a content is only mediated in being thought. And only then does an object become real ("wirklich").

In the "Begriffslogik" immediateness is viewed as, at the same time, mediated; so Hegel speaks of the mediated immediateness I have been discussing: "In der Sphäre des Begriffs kann es keine andere Unmittelbarkeit geben als eine solche, die an und für sich die Vermittlung enthält und nur durch deren Aufheben entstanden ist, d.i. die allgemeine" (Quoted in Theunissen, Sein und Schein, 414). Yet not only is immediateness mediated in the "Begriffslogik". Compare Hegel's statement at the beginning of the "Seinslogik", "daß es nichts gibt, nichts im Himmel

3.7 LIFE AS SUITABLE TO OBJECTIVITY

The immediate idea, “life” at the first level of the “living individual”, is suitable (“angemessen”) to its objectivity (or truth) insofar as it sets itself as such. In setting itself it is the "negative unity of this externality" (“negative Einheit dieser Äußerlichkeit”). The “setting”, the “determining”, consists in thinking the object, which for its part entails seeing this externality as a mere moment that entails its logical opposite - namely, the internal. The "immediateness of life" is, at first, only the “general soul”. It is the object, thought of as external to the thinking subject, with potential to be thought. Again, when thought, it is set.[208] Because it is at a stage where it can be so thought, it is "fitting for objectivity". Seeing this "objectivity" of the idea here should thus help us to understand one interpretation of the "objectivity" of the living individual – namely, as the idea when fully thought through.

By the time we have reached the immediacy of the “living individual” only the purpose must be set before the “object” attains “objectivity” or truth: the “living being” is already determined to such an extent – from the earlier determinations in the logic – that it is ready for this final determination, it is “fitting” for objectivity. At the point where we see the purpose as inherent in the thought-object, we then see the object in its realized purposiveness (“vollkommen Zweckmäßigkeit”), and we have

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oder in der Natur oder im Geist oder wo es sei, was nicht ebenso die Unmittelbarkeit enthält als die Vermittlung..."(Hegel, WdL, I, 56).

As is the case with the immediacy of reflection, here the immediateness is the negation of what has been mediated. It is an abstraction away from what has been thought thus far. But as such, it is thought; it is thus mediated (Theunissen, Sein und Schein, 346). As Theunissen puts it, in judgment, the immediate "ist eingebunden in ihr Gegenteil" - as such the "Vermittelkeit enthält sie" (Theunissen, Sein und Schein, 414). When we take a step backwards and try to imagine the object from the perspective before it was mediated through thinking, we picture it in immediateness, or mediated immediateness. Logically speaking, it is also the dialectical opposite of mediation: and we can only understand the two concepts together.

[207] Hegel, Enzyklopädie, §216.

[208] Hegel, WdL, III, 216-7.

then attained the objectivity of the "living being" that Hegel calls an "organism".[209] And each of the parts are then seen as interrelated with one another, both the means and the tools of the purpose ("Mittel und Werkzeug des Zwecks") and completed purpose ("ausgeführte Zweck"), to recall again the text cited at the beginning of this chapter. In short, we see the organizing principle of the concept under consideration. We see it as having a "general" which is predicated of it. This "general" is seen to constitute the things purpose and, with that, its truth.[210] This idea is its substance.[211]

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[209] Hartmann emphasizes Hegel's holism as follows: "The whole in terms of function is present in every member, as every member is in its way the whole, each in a different way. It is impossible to conceive a single categorical essence without at the same time the whole. Its structure is not enclosed in its own independent being, but in that of the whole system" (Quoted in Gray, Hegel's Hellenic Ideal, 82). The part is always a part of the organic whole. Hegel himself wrote that Aristotle's philosophy had such a holistic moment, but that it "really requires recasting so that all his determination should be brought into a necessary systematic whole..., one in which there is one living organic whole, in which each part is held to be a part, and the whole alone as such is true" (Quoted in Gray, Hegel's Hellenic Ideal, 88; from the PdG, 415).

[210] Hegel, WdL, III, 216-17. The hard reading of Hegel on the organism question can be supported on the basis of some texts where Hegel speaks as if the "general" in such a thing constitutes its purpose ("Zweck"). We can see the "living being" is an individual that is realized when its "genus", its form, is known. Such knowables are organized unities, each is an organized "existent" (Dasein) - fully understood only with a view toward its purpose. Thus as an "organism", as an idea, as a combination of predicates in a combined unity ("zusammengeschlossene Einheit"). As knowable, as an idea, it is subsumed under the purpose of the concept in general. It is given life. Otherwise, it would be an unorganized mass that could not be thought, could not be grasped. As an unorganized mass it would not exist as anything specific.

[211] While Hegel here characterizes "life" as described in the "vermittelte Unmittelbarkeit der Idee", he offered other terms for it in his earlier writings. In the Berliner Schriften from 1822, using almost exactly the same wording as in the Science of the Logic, it is not "life" that is specified as the immediacy of the idea ("Unmittelbarkeit der Idee") but "die Natur": "Die Bestimmtheit, in welcher die Idee als Natur ist, ist, daß die Idee als unmittelbar ist". Or more specifically: "Die unmittelbare Idee überhaupt ist nur die Natur" (Hegel, Werke, vol. 11, 525). Here nature is treated as "mind's other" ("Geistes Andere"), i.e., that which is external to mind (its "Äußerliche"). This parallels another specification also applying to his later usage of "life". "Nature", in this text, like "life" in the Science of the Logic, is conceptually contained in mind as its negative.

In this text, as in the logic, this "immediate" is realized, or finds its truth in the idea. Just as "life" is identified with the least concrete form of the idea in the logic, so too is "nature" in the Berliner Schriften: "Die Natur, aber, in ihrer Wahrheit ist die ansichseiende Idee" (Hegel, Werke, vol. 11, 548). Or as Hegel also says: "[D]er Begriff, und dann der als Begriff existierende Begriff, der Geist, ist nur, insofern die durch Aufheben der Unmittelbarkeit für sich seiende Idee ist" (Hegel, Werke, vol. 11, 548). As in the logic, here too the lowest form of the idea is identified with certain objects that are separate and external from thinkers - already concretely determined indeterminacy. Seeing that Hegel designates the term "nature" in the Berliner Schriften for those objects existing separately from thinkers at least suggests that Hegel does not merely identify it with animals and plants, but with some other non-organic things as well, including the world as a whole.

3.8 LIFE AS ALL-PRESENT SOUL – REVERBERATIONS OF ARISTOTLE

Hegel also treats "life" as "all-present soul": in so doing he describes that "soul" as a whole that is immediate, but suitable to objectivity: this soul exists in two states, both as sleeping a awakened soul. As first glance this perspective this sounds rather mystifying: what might it mean that "life" is "all-present soul"?[212] Hegel offers this view at the end of the Introduction to section "life" in the Science of the Logic in a detailed summary of his view of life, which entails a number of the ideas explicated in the earlier cited statement that "the living individual" is an "organism":

> Das Leben, in seiner Idee nun näher betrachtet, ist an und für sich absolute Allgemeinheit; die Objektivität welche es an ihm hat, ist vom Begriff schlechthin durchdrungen, sie hat nur ihn zur Substanz. Was sich als Teil oder nach sonstiger äußere[r] Reflexion unterscheidet, hat den ganzen Begriff in sich selbst; er ist die darin allgegenwärtige Seele welch einfach Beziehung auf sich selbst und eins in der Mannigfaltigkeit bleibt, die dem objektiven Sein zukommt.[213]

Most of the characteristics of his description of the living individual are also found here. Hegel again speaks of "the objectivity" of life, which has only the "concept" for its "substance". Further, it contains all the differences of reflection within itself as moments – all which are familiar themes by now. Additionally, however, the "all-present soul" is said to have a relationship within itself. Precisely as "all-present soul" the concept is self-related; as such a soul its parts are present in interdependence. Given that so much of this parallels the quote under consideration in this chapter

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[212] There is another perspective from which to view life; namely from the standpoint of mind. From this point of view "life" has two appearances. On one hand, it is viewed in contrast to mind itself, which stands above it; on the other hand, it appears to be united with mind through mind's own efforts, in which it grasps its own forms, present in the natural objects that it apprehends. Hegel here has in mind that we think of the natural world ("life") as separate from the subjects that apprehend it. On the other hand, however, it is the thinking subjects who experience "life" (or "nature") as separate from them. So life is viewed both as separate from and united to the thinking subjects who experience it.

[213] Hegel, WdL, III, 214; Miller, 763. "Life, considered now more closely in its Idea, is in and for itself absolute universality; the objectivity that it possesses is permeated throughout by the Notion and has the Notion alone for substance. What is distinguished as part, or in accordance with some other external reflection, has within itself the whole Notion; the Notion is the omnipresent soul in it, which remains simple self-relation and remains a one in the multiplicity belonging to objective being."

and that it is explicated with reference to the "all-present soul", it will behoove us to consider it in somewhat more detail.

What Hegel means by this is not as mysterious as it may sound. To get behind the jargon here it should help to look at the beginning of his "Anthropology", where Hegel also treats "soul" and "substance".[214] There too "soul" is equated with "substance", and further with the passive "Nous" of Aristotle, "the possibility for everything" ("die Möglichkeit nach alles"). In certain respects it merely repeats points made in the text above; but seeing Hegel's view in reference to his appropriation of Aristotle should shed some more light on this all.[215]

In Hegel's historical treatment of Aristotle he identifies "Nous" with the "an sich", a term for an object existing in its potential form.[216] It is the conceptualization of the material world of objects as separated from us, but which can be known when reflected upon. Until it is actively thought, however, it exists as mere potential - not yet determined.[217] It is here, as passive, the "Schlaf des Geistes": and to realize it we must think it, applying our categories to it, thereby waking it from its slumber. It possesses the forms that will be thought, but – as "sleeping" – they are not yet realized in the form of thought. The soul is described in this passive state merely as potential, or the "Möglichkeit nach alles", which reverberates Hegel's reference in the "Logic" to the soul as "all-present". Nothing will be thought that does not exist in potential, as this "all present soul"; and actively thinking consists in waking this slumbering soul, which is always present, but not always reflected upon, so not always realized. We can view this process of waking soul as moving beyond

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[214] Hegel, Enzyklopädie, §389.

[215] For a clear presentation of Hegel's reliance upon Aristotle on the body soul problematic see M. Wolff, Seele-Körper Problem, esp. 50ff.

[216] Hegel, Werke, 19, 164.

[217] This moment of "Geist" in it is essential, however. Hegel also writes: "Die Materielle in seiner Besonderung hat keine Wahrheit, keine Selbständigkeit" Enzyklopädie, §389, add. See also §381 where "Geist" is portrayed as the truth of nature. Only when "passive soul" is awakened is truth known about nature.

seeing it as merely immediate. As immediate it mind is sleeping, but in thinking or "setting" this "immediately given" we wake "Geist" from its slumber.

This idea of the sum of external things as non-determined, just before its final mediation, is the idea of "life", which Hegel tells us is "befitting for objectivity". Its potential can be awakened: if it is reflected upon, if we apply our forms to it (like the activity of Kantian spontaneity or Aristotelian active intellect), then we shall determine it as true, as objective. We shall find out what it is. But it must be borne in mind that the sleeping and the awakened Geist are connected, both being necessary moments of the thinking process. The characteristics that we ascribe to the natural objects when thinking them are the characteristics that they have; and the whole process of determination is the process of thinking, which, in the last analysis, is to be viewed as a self-related whole. That substance, which is the soul, is only realized when it is seen as a part of this all-encompassing whole.[218] Life is this whole with integrated parts already explained to be a monad of monads in the Science of the Logic section entitled "Objectivity".

While Hegel's appropriation of Aristotle is clarifying in some respects, it also admits of a confusion. After all, speaking of soul as "all present" sounds rather mystical, so we might think that we have some reason for an animistic interpretation of Hegel. But what he says here cannot be isolated from his texts in the philosophy of nature, for example, where he says that in nature it is only plants and animals (including humans) that have "soul". I would thus suggest that rather than reading Hegel as flatly contradicting himself, we interpret him as saying that human consciousness has these two moments within itself: in the first we think of the world as external from us; in the second, we think about that world, thus in some sense unite with it. Since these are two aspects of the human thinking process, they can be considered two parts of the human soul.

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[218] Again that the whole is viewed as soul does not mean that Hegel wants to attribute "soul" to non-organic objects in nature. In his Philosophy of Nature he notes that only plants and animals have "soul", not mechanical or chemical objects.

This whole process of thought has three moments which more clearly specify what the organism is: 1) the living individual ("lebendigen Individuum"), as a subjective, not yet objective unity, with objectivity still external to it; 2) the life process, in which the living individual supercedes ("aufhebt") its "presuppositions" (i.e., the nature and the previous conditions of the Geist), making itself to a unity with its other in this process, incorporating the other into itself and recognizing itself in the other; 3) the species process, at which point this supersession is complete. At this point it takes what has been scattered and incorporates it into itself.[219] Hegel clearly identifies the first level of the idea with an organic whole. "Life", as all present soul, becomes realized soul in being thought. This is the idea as a whole, not the idea of particular things. When thought "the living individual" attains its objectivity, its truth. But as in the idea, so too in the application of the organism view: these three processes play their roles.

3.9 "LIFE" IN REFERENCE TO THE IDEA IN GENERAL - THE ENCYCLOPADIA ACCOUNT

In the context of the Encyclopedia it is especially clear that Hegel is not dealing with a view of multiple organic things in his account of "life" and the "living being", but rather with the idea as a whole: "In the idea we have nothing to do with the individual, nor with figurative conceptions, nor with external things."[220] So, when Hegel here talks about the living individual as an organism, he is not talking about viewing each individual "substance" as a living individual. The individual things constitute moments of the idea, which Hegel has already differentiated into three sorts of objects in his section "Objectivity". Altogether they comprise the whole which is then still the focus of the last section of Hegel's logic: "Every individual being is some one aspect of the idea:...it is only in them

[219] In Findley's words, "Life is, as it were, universality drowned in the specificity and individuality which it also needs."

altogether and in their relation that the notion is realized. The individual by itself does not correspond to its notion."[221] That the living individual is "fitting to objectivity" thus does not mean that each substance is fitting to fully reflect the notion, just that taken together as a whole that itself contains differences, it is such an individual. This is also reflected in the following Hegel quote about the idea: "The idea itself is not to be taken as an idea of something or other, any more than the notion is to be taken as merely a specific notion."[222] The last section of Hegel's logic, in which the living individual is thematized as the first stage of the idea, thus does not purport the we see each object as an organism, only that taken as a whole the idea is an organism and the various sorts of objects are its organs.[223]

The general substance - the passive Nous - undergoes development. (Its reality – "Wirklichkeit" – consists in this.) When "objective", the idea - with the "living being" as its lowest level - is above all to be identified with the truth.[224] But the truth of this idea is not able to grasped or expressed in a single sentences. Instead, it is seen in the entire process of the development of the idea. In this process there are numerous moments in which the understanding unveils oppositions, and contradictions, and reason unifies them again. This whole constitutes the idea, and it is a dialectic unity. As Hegel writes:

> die Idee ist selbst die Dialektik, welche ewig das mit sich Identische von dem Differenten, das Subjektive von dem Objektiven, das Endliche von dem Unendlichen, die Seele von dem Leibe, ab- und unterscheidet und nur insofern ewige Schöpfung, ewige Lebendigkeit und ewiger Geist ist....sie ist Dialektik, welche dieses Verständige, Verschiedene über seiner Produktionen wieder verständigt und in die Einheit zurückführt...[S]ie ist ewige Anschauen

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[220] Hegel, Enzyklopädie, §213.

[221] Hegel, Enzyklopädie, §213.

[222] Hegel, Enzyklopädie, §213.

[223] This conflicts with McTaggart's classical treatment. He proposes, in contrast, that everything is organic in Hegel, "nothing inorganic exists" (Commentary, 280). He also says "that all that exists forms a Universe composed of Individuals, that the Universe and that each Individual is an organic system, and that the relation which exists between the Universe-system and each of the Individual-systems is one of perfect harmony" (Commentary, 308).

[224] Hegel, Enzyklopädie, §213.

> ihrer selbst im Anderen; der Begriff, der in seiner Objektivität sich selbst ausgeführt hat, das Objekt, welches innere Zweckmäßigkeit, wesentliche Subjektivität ist.[225]

The process moving from the setting of the subject and object distinctions to their re-unification or reconciliation, is described here in short pregnant form. Some of the most important leitmotifs of the logic are found here. The idea is the process - here described as dialectic. Through this dialectic it is led back into a unity. Further, it is self-related, self-reflexive, eternally viewing itself in others (being the "ewige Anschauen ihrer selbst im Anderen"). It sees itself reflected in its perceptions, because it organizes our perception. But it also sees itself in human creation (its creations), in the political, socioeconomic institutions that exist as well as in the conceptualizations of all types of experience. Finally, there is the important announcement: it is an object with inner-purposiveness ("innere Zweckmäßigkeit") and thus in essence subjectivity ("wesentlich Subjektivität"). As such, the idea here is essentially viewed as an "organism", in which, to quote from the citation at the beginning of this chapter, the "subjective purpose... immediately unites with itself" ("subjektive Zweck ... unmittelbar mit sich selbst zusammengeschlossen ist").

The different ways of interpreting ("auffassen") the idea - as ideal or real, finite or infinite and so on - are formal.[226] They represent different stages of a specific concept or different members of an organism. The idea is essentially the process in which these stages are moments: "Sie ist der Verlauf, daß der Begriff als die Allgemeinheit, welche Einzelheit ist, sich zur Objektivität und zum Gegensatz gegen dieselbe bestimmt und diese Äußerlichkeit, die den Begriff zu ihrer Substanz hat, durch ihre

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[225] Hegel, Enzyklopädie, §214. "The idea itself is the dialectic which for ever divides and distinguishes the self-identical from the differentiated, the subjective from the objective, the finite from the infinite, soul from body. Only on these terms is it an eternal creation, eternal vitality, and eternal spirit....The Idea is the dialectic which again makes this mass of understanding and diversity understand its finite nature and the pseudo-independence in its productions, and which brings the diversity back to unity....[T]he idea is the eternal vision of itself in the other, notion which in its objectivity has carried out itself, object which is inward design, essential subjectivity."

[226] Hegel, Enzyklopädie, §214. Hegel uses the section beginning here to summarize the process he has been describing throughout the book.

immanente Dialektik sich in die Subjektivität zurückführt."[227] The three stages of this dialectic process at the level of the idea are reflected in the three section titles of the last part of the Science of the Logic: life, recognition and the absolute idea. Just as the living individual in the opening quote of this chapter is described as "completely purposive because the concept constitutes its substance" ("vollkommen Zweckmäßig da der Begriff ihre Substanz ausmacht"), so too in the process of the development of the idea, it has the "concept as its substance" ("der Begriff zu ihrer Substanz").

In describing this at the early stage of the living individual Hegel invokes the images of a connected body and soul that are helpful in understanding his view of life. "Life" is not only "all-present soul", it is also like a soul realized in a body. We have seen the "living individual" characterized as that passive state of potentiality of immediate things. As an immediate object it is like a body separated from the soul, but it can become united with the body when thought. When a "soul" is realized in a "body", then the goals previously viewed as external to things are viewed as internal; then the various parts of it take on unity, being viewed as members (Glieder) of an "organism", in Hegel's words, "so daß alle Glieder sich gegenseitig momentane Mittel wie momentan Zwecke sind."[228] This connected soul and body is thus an "organism", at one and the same time "means and tools of the purpose" ("Mittel und Werkzeug des Zwecks") and "itself the fulfilled purpose" ("selbst der ausgefuhter Zweck").

The entire edifice of reason is a connected whole: it is a soul realized in a body. This edifice parallels the view of the Architectonic in which Kant portrays the idea as a teleological whole. Hegel, however, abandons the distinction between regulative and constitutive ideas. He also claims that it entails – or rather, consists in – a dialectic process.

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[227] Hegel, Enzyklopädie, §215. "It is the round of movement, in which the notion, in the capacity of universality which is individuality, gives itself the character of objectivity and the antithesis thereto; and this externality which has the notion for its substance, finds its way back to subjectivity through its immanent dialectic."

3.10 THE IDEA AS A UNIFIED CONNECTION

This organic whole is self-related: in the Encyclopedia "life" is the first specification ("die anfängliche Besonderung"), containing differences as a part of itself; but in the final analysis it results in "the negative unity, existing for itself," which "unites with itself" ("die negative für sich seiende Einheit" die "mit sich selbst zusammenschließt") as a dialectic body, or corporeality ("Leiblichkeit"). This once again reverberates the Science of the Logic text earlier cited, where the "objectivity of the living being" is also so described as "immediately united with itself" ("unmittelbar mit sich selbst zusammengeschloßen"). In both the Encyclopedia and the Science of the Logic Hegel consistently describes "life" as the process in which the differences are themselves an end and means ("Zweck und Mittel") in this uniting process (Zusammenschließung): the final unity is attained, but the diversity of the parts is to be protected. This is also the character of other systems that Hegel describes – the state, the discipline of philosophy, and so on.

The same self-related quality is emphasized in Hegel's more logically-oriented characterizations of the idea, which also more clearly indicate that Hegel is dealing with a particular organizational form of the idea:[229] "Das Lebendige ist der Schluß, dessen Momente Systeme und Schlüsse in sich

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[228] Hegel, Enzyklopädie, §216. "so that all the members are reciprocally momentary means as well as momentary ends." Up to this point in his treatment, Hegel has spoken from the Idea in general. At section 216 he begins his discussion of the specific stages.

[229] Hegel, Enzyklopädie, §§221-2. One problem looming in his logical treatment is that Hegel continually oversteps the bounds of a pure logic. It is clear when we think about concrete instances what he means here, and when discussing these ideas he often refers to such concrete examples, especially in the additions to the Encyclopedia. So we can think of one individual life form that has its own processes, and a certain independence (Selbständigkeit)- say a woodpecker. This woodpecker must sustain itself by assimilating others - in short by eating them, or breathing the air, or drinking water. (The plants and animals, the air and the water are all "others"). It is clear enough how this works in reference to a woodpecker. But as soon as this woodpecker becomes a pure idea of a "lebendigen Individuum", this step becomes harder to follow. Hegel is all but clear in his explication of why the idea of "living being" must leave itself to fulfill itself in another. In nature the individual needs nourishment, it has a need because it cannot be sustained in isolation alone, but must integrate what is external into itself. So plants, need water, and sunlight for photosynthesis; animals must eat plants, etc.. In so doing the individual oversteps the bounds of itself and unites with another. But it is not so clear that at the level of a pure idea something like this is inevitable. The going outside of itself would apparently

sind".[230] Here, although Hegel's language use is atypical, he appears to mean that all of the conclusions already reached about the idea belong to the idea at its developed levels. They are conclusions incorporated into the final conclusion. As such, the idea is a conclusion of conclusions.[231]

Hegel emphasizes that the drawing of conclusions is a self-related process ("der Prozeß seines Zusammenschließensmit sich selbst"). This occurs in dialectics (in which a concept, by being defined in reference to its opposite, is viewed as containing its opposite within itself as its negative moment). The isolated "living individual" cannot be understood in isolation. It must be understood in relation to ideas that stand in opposition to it.. It must cross over into its other and make its other a part of itself. This process is comprised of three sub-processes, or to put it differently, this conclusion is composed of three other conclusions.[232]

The parts that Hegel here describes as comprising the idea of the living individual – which apply to organisms in general – are the same processes he uses to describe material organisms of nature: form, assimilation and reproduction ("Gestalt", "Assimilation", "Gattung"). The first is the inner process of the living being, or the "organism" as its own object as an individual. Its own parts are organized in a particular way; this forms it and defines its possibilities and limitations. The parts which comprise it react to one another in a particular fashion, they are systematized, organized. Hegel writes of "the process of the living being inside itself."[233] In this, its elements at first "mutually

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consist in only being clearly definable in reference to a web of other concepts. But the discussion of this in reference to so many examples from nature obscures this more than it clears it up. And I, like so many before me, see no way of completely making sense of Hegel on these issues. The lack of other clear examples has clouded the issue.

[230] Hegel, Enzyklopädie, §217. "A living being is a syllogism, of which the very elements are in themselves systems and syllogisms..."

[231] In Marcuse's ontological reading he argues that because each thing is a "conclusion" (Enzyklopädie, §167), the conclusion is a determination of the thing itself (142).

[232] Hegel, Enzyklopädie, §217.

[233] Hegel, Enzyklopädie, §218.

become each others prey", but in a mere process in which the "subject only reproduces itself."[234] Speaking in reference to the processes of sensibility, irritability and reproduction in nature, he implies that any organism at least has similar inner-relationship of self-generation at this stage and "only exists as this continually self-renewing process within its own limits."[235]

One of the things characterizing the "gestalt" is that it lacks something in itself which it must seek outside. And it maintains, develops and objectifies itself in this process as it passes beyond itself. As Hegel notes, "the negative relation of the living thing to itself makes, as immediate individuality, the presupposition of an inorganic nature confronting it. As this negative of the animate is no less a function in the notion in the animate itself, it exists consequently in the latter ... in the shape of a defect or want"[236] In this, the "living being" must overlap with what is other than itself, with that external to it; at the same time this "other" cannot resist being overlapped. In assimilating the "other", then, the "living being" makes the other itself: it can only be complete in itself, if it assimilates, so we could say that it is only what it is because of the other. It is only complete in the other, and the boundaries of the system are then of necessity fluid.[237] Such a "living being" continually crosses its borders.[238] The "living individual" assimilates its other; it also goes outside of itself, impacting upon others and being incorporated into others. [239]

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[234] Hegel, Enzyklopädie, §218.

[235] Hegel, Enzyklopädie, §218, add.

[236] Hegel, Enzyklopädie, §219.

[237] Hegel, Enzyklopädie, §219.

[238] In McTaggart's words, "the idea of kind is now the soul, or principle of unity, of each organism" (Commentary, 281). His seems to me correct in his assessment that Hegel has failed to show how one organism logically produces another of the same kind (282-3).

[239] Hegel, Enzyklopädie, §218. Findley also sees Hegel's organism concept as merely applying to some objects: "...the living teleological system not only confronts a non-teleological, mechanical-chemical environment: it, as the higher expression of the Begriff, must necessarily endeavor to overcome and dominate the latter. It is aware of the gulf between itself and the non-teleological environment in the experience of need and pain, and it launches out from this to assimilate the environment to itself, to make it what it wants it to be" ("Hegelian Treatment of Biology and Life", 90).

"An sich" this living individual is the genus, or what Hegel calls also the "substantial generality" ("substantielle Allgemeinheit").[240] In the VGP he identifies it with the essence of a thing.[241] It has a general characteristic that defines its goal and essence. As in Aristotle, in Hegel's thought there is a striking similarity between the form of the subject and its teleology, the teleological principle often being described as the general, form-defining characteristic. The living being, however, cannot fully express this essential character. It cannot become fully what it truly is, but always contains some contradiction within itself. Hegel claims that the living being dies because of this contradiction. On the one hand, it is general, as the genus. On the other, it is an individual being. So there is a split between its general and individual character.[242] But what is split becomes unified. All the moments that can be viewed as separate from one perspective can be viewed as unified from a deeper one, assimilated into the idea, which is an organic whole.

Here, as in the section of the logic entitled "the object", Hegel appeals to examples from nature in explicating the processes, and it is difficult to see how this plays out in the logic, i.e., how one idea is really thought to logically necessitate one another. Where exactly do you find the concept of "need" in "form"? How does "form" otherwise logically imply "assimilation"?How does the "genus" of the idea as a whole come into conflict with that idea's individual character? Logically the section seems to give rise to an awful lot of questions. He may have had some intuition that the processes could logically imply one another, but his development of it appears wanting. [243]

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[240] Hegel, Enzyklopädie, §220.

[241] Hegel, Werke, vol. 18, 398.

[242] Hegel, Enzyklopädie, §§221-2.

[243] Although Hegel does not introduce these subdivisions in his table of contents, the texts show that he clearly takes them for the subdivisions of the "living individual". Their fittingness for the logic has been much disputed. It is easy to agree with Hartnack's assessment: "Der Verdacht, die drei Lebensbegriffe mußten, um in das Gesamtschema zu passen, in ein Prokrastesbelt gezwängt werden, ist nicht ohne weiteres von der Hand zu weisen." See also Stace, who judges even more harshly, saying: "It is difficult to take such a deduction seriously" (Stace, The Philosophy of Hegel, 283).

3.11 A SHORT EXCURSUS - "LIFE" IN EARLY TEXTS[244]

Hegel embraced the general views about the organism that he later developed in the logic very early in life. Similar characterizations are found in writings spanning his entire philosophical career. The idea, like Kant's Architectonic, is always seen as an organic, unified whole. But unlike Kant's Architectonic, Hegel's idea is always viewed as uniting various oppositions. In the Jaener Schriften Hegel writes of the task of philosophy: it seeks, "das Sein in das Nichtsein - als Werden, die Entzweiung in das Absolute - als dessen Erscheinung, das Endliche in das Unendliche - als Leben zu setzen".[245] Here "life" is thought to be reached through the combining of the finite and infinite, which characterizes Hegel's view of truth. Things must be set as "life", at its higher level of determinacy. "Life", as realized, as set or determined, is then an organized whole. So, it is treated in the Nürnberger Schriften as "ein organisches System", as "die unmittelbare Einheit des Begriffs und des Daseins" - in which, as is typical for such expressions, the whole is maintained through the parts and the parts through the whole.[246]

"Life" is here characterized in general. In the Geist des Christentums it is handled as "immediacy" - as life before it is determined. Later it is shown in its developed form, as "actus", determined as a connection ("Zusammenschließen") of parts or members. Exactly such a view of "Zusammenschließen" is a characteristic of the final stages of the idea, where the idea attains its "truth". These early texts then show intimations of Hegel's later-developed theory. In various texts life is treated as "immediacy", a "connection" and as an "organic whole", characterizations found at various stages in the process of "life" as later explicated in the Science of the Logic.

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[244] In examining these early texts I am following Hyppolyte's lead. Hyppolyte sees Hegel's philosophy as fundamentally attempting to "think life"; or as he also says: "it seeks to be the thought of human life"(Essays on Marx and Hegel, 3). He argues that it is only possible to understand Hegel's view of "life" on the basis of his early writings (Essays, 14).

[245] Hegel, Werke, 2, 25.

[246] Hegel, Werke, 2, 158.

In the Nürnberger Schriften, too, "life" is already presented as including the logical process of combining, integrating parts (zusammenschließen), through which a unity ("Einheit") is reached. And even as early as the Der Geist des Christentums hints of such a view are to found. Perhaps even more significant for my purpose, we find him maintaining that this combining of parts into a whole forms an "organic system", as he continues to maintain in his later logical texts.

Hegel shows in these early texts that he already views the idea as a whole as constituting an organic system. His later work shows even more clearly how he incorporated the ideas of Kant into his understanding of the organism as well as the ideas of natural philosophers. First, the idea is a whole in which means and ends are mutually served; and it has the concept for its substance. Beyond that, however, in explicating his view of the idea as an organism in his later texts Hegel indicates that the concept of the organism is comprised of three sub-elements, the processes paralleling the natural scientific views of his time. It has a form, entails a process of assimilation and reproduces itself. The idea, however, is not the only system outside of the realm of nature that Hegel views as an organic system of this sort; instead, he views a wide array of other systems as also able to be characterized by these processes.[247]

Also, while Kant sees the idea as an organic whole in his Architectonic, he does not emphasize, as Hegel does in his further characterization, that this idea is a composite of opposites. So, Hegel does more in his explication than merely say that he sees this Kantian whole as constitutive, not regulative. The members of Hegel's organism are considered potentially contradictory, at odds with each other, but serving each other insofar as the idea is "alive". Hegel's organic whole is at the same time a dialectic whole. Further, Hegel's views of the idea in the logic show that he not only appropriates Kant, but also Aristotle. As in Aristotle's view of the "Nous", so too there is an active

[247] Although Hegel here is focusing on the idea as a whole, characterizing it as this sort of organism, the other texts examined show that he thinks the concept to be widely applicable.

and passive element in Hegel's view of "soul". It is considered a body united with soul when the two elements are thought together; when this soul is awakened, then the whole can also be viewed as an organic body. Hegel thinks that the idea which is present in things in the world attains its objectivity when it is thought about. When thought through this whole is shown to be a unification of potentially opposing elements. In short, there are great parallels between Kant's "Architectonic", Aristotle's "Nous" and Hegel's "Geist", "Soul" or "Idea": Hegel views each of these as dealing with roughly the same subject matter, i.e., the idea as a whole. But while Hegel thinks both Kant and Aristotle have valuable insights about this whole, he also thinks that both fail to see its dialectical character.

I shall next turn to Hegel's view of the natural sciences, both to explicate his own view of their validity and importance and to examine the historical context giving rise to his own views of the organic. The views delineated in the logic parallel those developed in the life sciences of Hegel's time. Seeing this allows us to bring Hegel's philosophy of the organic into greater historical perspective.

CHAPTER FOUR

HEGEL AND THE NATURAL SCIENCES

Hegel's relationship to empirical sciences has been ignored to a large extent, partially because of the general failure of and fanciful character of much Romantic philosophy of nature, and partially because numerous views that Hegel defended have been proven to be wrong. However, neither of these reasons are really a sufficient ground for ignoring his texts.

Too often all efforts in the natural sciences of various late-eighteenth and early-nineteenth-century German philosophers and scientists are lumped together and rejected out of hand. Yet, lumping very different thinkers together indiscriminately is no virtue for a scholar. And in the case at hand we have many reasons for viewing Hegel as different from many of the other "Naturphilosophen". This was, at the very least, his own self-assessment: in the very first paragraph of his introduction to the Philosophy of Nature Hegel himself leveled similar criticisms against Schelling and other transcendental philosophers of nature to those sometimes leveled against Hegel, criticizing them for thoughtless superficiality and empty formalism (their theories being a "begriffloses Instrument für die Oberflächlichkeit des Gedankens").[248]

Regarding the second point, it ought be borne in mind that Hegel's method in the philosophy of nature even takes into account that some of the facts presented there - some of the content - will be mistaken. So it is that Hegel himself changed views presented in different editions of the Encyclopedia over the course of his life, accounting, for example, for advances in the theory of light, and changing his mind about the distances between the planets.[249] What remains constant, in Hegel's view, are not the facts presented, but the method of presenting them. So the fact that Hegel erred regarding some scientific facts does not undermine his endeavor in the philosophy of nature.

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[248] Hegel, Enzyklopädie, vol. 9, 9. "...thoughtless instrument for superficial thought" (trans. DPA).

[249] Hegel, Enzyklopädie, §280, remark. Walter Kaufmann is of course correct to point out that while it is true that Hegel changed his position in light of new evidence, it does not speak for him that he did not explicitly thematize that he had changed his mind, or why, but continued to present his ideas as if they were Aabsolute knowledge@ (See,

Indeed given that he admits to mistakes he made in his earlier theory, he probably also thought that some (if not many) of the ideas he embraced in his mature work might be made obsolete. (His rejection of evolutionary theory may be one such case.[250] While rejecting the pre-Darwinian evolutionary views as fanciful, he never rejects evolutionary views out of hand; instead, he insists merely that at the time of his writing the traditional account of the creation of species in their full maturity is the best available theory. In that passage, which I shall examine later, he seems clearly to show an openness to a better theory being developed.)

These typical reasons for ignoring the philosophy of nature are thus really not very good ones. Hegel's own views of the relationship of philosophy to science are neither uninteresting nor irrelevant. Further, some of his views of natural science exercised a strong influence on his theory in general, thus allow deeper insight into his thought. My task here is twofold: first, I shall show how Hegel views the general relationship between empirical science and philosophy; second, I shall examine Hegel's view of natural organisms.

4.1 HEGEL ON PHILOSOPHY AND EMPIRICAL SCIENCE

I have already shown how Hegel viewed philosophy as underpinning scientific research. For Hegel, as for Kant, there is "pure", philosophical aspect that must ground science, showing how the principles of empirical research are rooted in reason. Yet Hegel by no means devalues empirical research. I shall examine the following texts, where he speaks in detail about the relationship between philosophy and the sciences: 1) the general introduction to the Encyclopedia in section 12 as well

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Discovery of Mind, vol. 2, 250). Kaufmann argues that Hegel>s changes in the logic show that the determinations do not follow logical necessity, but are mere convenient categorizations (See, Hegel Reconsidered, 241).

[250] Hegel, Enzyklopädie, §339.

as sections 37 to 39 in which he discusses empiricism; 2) the Introduction to the Philosophy of Nature; and 3) the Lectures on the History of Philosophy.[251]

In Encyclopedia, section 12, Hegel discusses philosophy's need for both empirical experience and thinking, indicating many of themes later developed in sections 37-39 and in the introduction to the Philosophy of Nature. Experience is presented as the starting point for philosophy (it's "Ausgangspunkt"). On the one hand, experience provides the content for thought: it gives us something to think about. On the other hand, as thinkers we shape this content into its form. Development begins because we have the stuff to think about, and our forms of thought used in shaping experience reflect the world's forms. Both of these moments - that of assimilating the data, and of thinking it in the process - are necessary for thought.[252]

Hegel goes so far in emphasizing this as to say, "die Philosophie verdanke die Erfahrung (dem Aposteriorischen) ihre erste Entstehung."[253] This is so because thinking begins with the negation of the immediately given ("unmittelbar Vorhanden"). What we find before us in sense experience is negated insofar as we shape it into a particular form in thinking it. We do not, we cannot, leave it in its immediate formless state. As Hegel says in the VGP: "Der Mensch bleibt nicht beim Einzelnen stehen und kann es nicht. Er sucht das Allgemeine".[254] Or as he elsewhere clearly states: "Wenn die Physik indessen nur auf Wahrnehmungen beruhte und die Wahrnehmungen nichts wären als das Zeugnis der Sinne, so bestände das physikalische Tun nur im Sehen, Hören, Riechen usw., und die

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[251] Hegel, VGP, vols. 18-20.

[252] To put this point another way. As Wandschneider notes, the laws of nature are not able to be perceived by the senses alone. Thought is necessary. "Anfänge des Seelischen in der Natur in der Deutung der hegelschen Naturphilosophie und in systemtheoretischer Rekonstruktion," 45.

[253] Hegel, Enzyklopädie, §12, remark, 57. "Philosophy thanks experience (the a posteriori) its primary origin" (trans. DPA).

[254] Hegel, VGP, vol. 20, 84. "Humans do not remain with the individual and they cannot. They look for the general" (trans. DPA).

Tiere wären auf diese Weise auch Physiker."[255] And what is true of the physicist here is equally true of the biologist or any other thinking, experiencing person. We do not have raw empirical experience, but, as Kant also so strongly argues, interpreted experience.

Hegel compares the assimilation process (without invoking the name) in thinking with that in eating. Just as we can only eat because there is food, so too we can only think because, as the saying goes, we have food for thought. Our empirical experience is one necessary moment in the process of thinking. In fact, Hegel notes: "daß der Erfahrung die Entwicklung der Philosophie zu verdanken ist".[256] Philosophy owes its development to experience.

First of all, this means, as we have already seen, that perception is one moment in the process of thinking, and thought will move no further without it. But more meaningful than this, it is once again clear how historical Hegel's thought is: concrete experience and the development of science are brought into the field of vision. Not only is it necessary that we have empirical experience, but the accumulation of facts within a science also proves to be food for philosophy: "...die Philosophie so ihre Entwicklung den empirischen Wissenschaften verdankt...."[257] Or as he says shortly before this quote:

> Die empirischen Wissenschaften bleiben einerseits nicht bei dem Wahrnehmen der Einzelheiten der Erscheinung stehen, sondern denkend haben sie der Philosophie den Stoff entgegengearbeitet, indem sie die allgemeinen Bestimmungen, Gattungen und Gesetze finden; sie vorbereiten so jenen Inhalt des Besonderen dazu, in die Philosophie aufgenommen werden zu können.[258]

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[255] Hegel, Enzyklopädie, §246, add. "If physics were based only on perceptions however, and perceptions were nothing but the evidence of the senses, the activity of a natural scientist would consist only of seeing, smelling, hearing etc., so that animals would also be physicists."

[256] Hegel, Enzyklopädie, §12, remark. "...we may safely say that experience is the real author of growth and advance in philosophy."

[257] Hegel, Enzyklopädie, §12, remark. "Philosophy then owes its development to the empirical sciences."

[258] Hegel, Enzyklopädie, §12. "For, firstly, the empirical sciences do not stop short at the mere observation of the individual features of a phenomenon. By the aid of thought, they are able to meet philosophy with materials prepared

The sciences find at least hints of the laws and the classification schemes dictating them themselves. Philosophy simply then shows how these laws and determinations reflect reason, a process that allows for the development of philosophy. The work of empirical sciences - the accumulation of facts and the foundation of laws - frees up philosophy to concern itself with the necessary determinations of reason. Philosophers need not seek the facts of nature themselves; they can count on empirical researchers to do that and invest their own energies in showing how the facts reflect our original biologically-rooted capacities for thinking ("ursprünglichen und vollkommen selbständigen Tätigkeit des Denkens"). That, as we shall more clearly see, is the job of the "Naturphilosophie" in a nutshell.

The empirical sciences ("Erfahrungswissenschaften") aim at transforming raw empirical data into law-like form. But given the nature of human experience, the empirical sciences are forced to employ metaphysical concepts: empirical experience forces the use of the apriori categories. They are applied to things in the world, and in this there is a complex interaction between the empirical content and the categories.[259]

While Hegel views the empirical sciences as even perceiving laws of nature, he does not seem to think that they can fully grasp these laws. In speaking about the beginning of thought in his introduction to the Philosophy of Nature, which he - like Aristotle - thinks begins with wonder, he notes: "Wir fangen an wahrzunehmen, wir sammeln Kenntnisse über die mannigfaltigen Gestaltungen und Gesetze der Natur".[260] But this fact collecting, while being necessary, does not elevate the knowledge to the level of science, as I have shown earlier. That is the job of the logic and – in the case at hand

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for it, in the shape of general uniformities, i.e. laws, and classifications of the phenomena. When this is done, the particular facts which they contain are ready to be received into philosophy."

[259] Hegel, Enzyklopädie, §12.

[260] Hegel, Enzyklopädie, vol. 9, 12. "We begin to observe, and we collect data from the multifarious formations and laws of nature..."

– of the philosophy of nature, which shows clearly how the laws of nature reflect mind. So both empiricism and metaphysics are necessary for science.

This relationship is further examined in sections 37 through 39 in Hegel's treatment of empiricism. Empiricism comprises the second level of thought, after dogmatism. It is the moment of thought which arises because of two needs: first, the need for concrete content for thought; second, the need to prove everything, and to presuppose nothing. A good philosophy cannot accept a naive worldview, unable to be supported by facts (which is the level of presupposition accepted by dogmatists, who do not move further to try to support their ideas on the basis of empirical experience). So, good philosophers must look to the world to see that their worldview holds up in relation to the facts. Empiricism has this as its positive moment. It knows that experience supplies philosophy with its content. And insofar, it offers something positive, lacking in the dogmatic metaphysics, which is blind to this. But empiricism has a blindness of its own, its own negative moment; namely, it is blind to its own metaphysic.

Hegel again and again criticizes empiricists for this blindness. Numerous examples such as the following are found: "Der...formelle Mangel, den alle Empiriker teilen, ist, daß sie glauben, sie halten sich nur an Erfahrung; es bleibt ihnen unbewußt, daß im Aufnehmen dieser Wahrnehmungen sie metaphysizieren".[261] This is a particular problem for Bacon, who seems to think a raw, unfiltered experience possible, upon which we then can build scientific theory; but it is a problem characterizing the whole empirical tradition. The empiricists mirror the truth and the falsity of "sensual consciousness" ("sinnliches Bewußtsein"), which as Hegel tells us in the first chapter of his

[261] Hegel, VGP, Suhrkamp, vol. 20, 84. "The formal failure that all empiricists share is that they believe that they are merely limited to experience; they remain unconscious that in having these perceptions they are engaging in metaphysics" (trans. DPA).

treatment of it in the Philosophy of Mind, "erscheint als das reichste an Inhalt, ist aber das ärmste an Gedanken".[262]

Hegel hardly tires of emphasizing that experience is in fact comprised of two elements. On the one hand, there is the manifold stuff, the material of experience that empiricism recognizes. On the other hand, there are the general and necessary forms recognized by dogmatic metaphysics. These two philosophical moments are thus both necessary for thought to be adequate. But both the dogmatic metaphysicians and the simple empiricists fail to see the other moment as necessary for thought. Thus both of these moments of thought must be surpassed in a perspective which recognizes that each of them has a partial truth but neither of them the full truth. The full truth gives each its due.

Because each is a necessary side of the fuller truth, Hegel by no means dismisses empirical research, as is also evident in his treatment of Bacon in the VGP: "ohne die Ausbildung der Erfahrungswissenschaften für sich hätte die Philosophie nicht weiter kommen können als bei den Alten".[263] The ancients were dogmatic metaphysicians; and the moment of thought they comprise in the history of philosophy is the first level of objectivity of the dialectic logic. The second level, however, is necessary for philosophical development: "die Ausbildung der empirischen Seite ist so wesentliche Bedingung der Idee gewesen, damit sie zu ihrer Entwicklung, Bestimmung kommen könne".[264] Philosophy goes to work on the results of empirical research. That too is clear in his historical treatment of Bacon: "Die Idee, wenn die Wissenschaft fertig ist, muß von sich ausgehen, - die Wissenschaft fängt nicht mehr vom Empirischen an; aber daß die Wissenschaft fertig werde, zur Existenz komme, dazu gehört der Gang vom Einzelnen, vom Besonderen zum Allgemeinen."[265] Philosophy thus works with empirical results: "Nicht nur muß die Philosophie mit der

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[262] Hegel, Enzyklopädie, §418. "Although this consciousness appears as the richest in content, it is the poorest in thought."
[263] Hegel, VGP, vol. 20, 79.
[264] Hegel, VGP, vol. 20, 79.
[265] Hegel, VGP, vol. 20, 79.

Naturerfahrung übereinstimmend sein, sondern die Entstehung und Bildung der philosophischen Wissenschaft hat die empirische Physik zur Voraussetzung und Bedingung".[266] The question to now be explored is in what ways it thus differs from the natural sciences themselves.

4.2 THE "NATURPHILOSOPHIE"

The Philosophy of Nature is the second part of Hegel's Encyclopedia, which one can understand as an attempt, just like ordinary Encyclopedias, to present many of the main forms of knowledge available at his time. But as Michael Petry has emphasized, Hegel attempts to do this from the systematic viewpoint of reason, showing not just what facts there are in various branches of knowledge, but also how those facts systematically or logically hang together.[267]

Partially because of this encyclopedic intention and partially because of the fact that thinking is always about something, and the intention here is to show how we think about the various somethings, much of the text in Hegel's Philosophy of Nature offers empirical information - about mechanics, physics, organics. But it is clear that the general purpose of the Philosophy of Nature differs from that of these sciences themselves. The empirical sciences are devoted to perception and experience, thus seem to have this difference from natural philosophy, which is devoted to showing how thought forms particular types of scientific experience. Yet, this difference is not a strict one, because the natural sciences have much more to do with the realm of thought than they typically realize, as Hegel stresses again and again.

A non-strict but still existent difference is able to made on the basis of what these disciplines emphasize: their difference lay in the manner of thinking: "Physik und Naturphilosophie

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[266] Hegel, Enzyklopädie, §246. "It is not only that philosophy must accord with the experience nature gives rise to; in its formation and in its development, philosophic science presupposes and is conditioned by empirical physics."

unterscheiden sich also nicht wie Wahrnehmen und Denken voneinander, sondern nur durch die Art und Weise des Denkens; sie sind beide denkende Erkenntnis der Natur".[268] The sciences themselves will emphasize the facts accumulated according to its laws and classification schemes, whereas the philosophy of nature will emphasize the laws and schemes, which reflect the transhistorical categories of the human mind. It is the role of the philosophy of nature to emphasize this logical connection of the natural scientific ideas.[269] For though the development of philosophy is dependent upon the development of empirical science, philosophy also serves as the foundation for these empirical sciences:

> Ein anderes ... ist der Gang des Entstehens und die Vorarbeiten einer Wissenschaft, ein anderes die Wissenschaft selbst; in dieser können jene nicht mehr also Grundlage erscheinen, welche hier vielmehr die Notwendigkeit des Begriffs sein soll.. - Es ist schon erinnert worden, daß, außerdem daß der Gegenstand nach seiner Begriffsbestimmung in dem philosophischen Gange anzugeben ist, noch weiter die empirische Erscheinung, welche derselben entspricht, namhaft zu machen und von ihr aufzuzeigen ist, daß sie jener in der Tat entspricht.[270]

Because the empirical content must be shown to correspond to the concept, the Philosophy of Nature will deal with a lot of empirical content. The task here is to show how empirical knowledge corresponds to the forms of thought, so both the forms of thought and the existing empirical

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[267] Hegel, Philosophy of Nature, Trans. with intro. Michael Petry, p. 19 ff.

[268] Hegel, Enzyklopädie, vol. 9, 11. "Physics and philosophy of nature are therefore to be distinguished, not as perception and thought, but merely by the nature and manner of their thought. Both are a thinking cognition of nature" (Petry, vol. 1, 193).

[269] What Ernst Cassirer notes of the logic also applies to the categories of the Real Philosophy: AThe constancy of the ideal forms has no longer a purely static, but also and especially a dynamic meaning; it is not so much a constancy in being, as a constancy in logical use. The ideal conditions spoken of by the logic and mathematics are the permanent lines of direction, by which experience is oriented in its scientific shaping. The function of these connections is their permanent and indestructible value, and is verified as identical through all change in the accidental and Function, aerial of experience@ (See Substance and Function, 323).

[270] Hegel, Enzyklopädie, §246. "The procedure involved in the formation and preliminaries of a science is not the same as the science itself however, for in this latter case it is no longer experience, but rather the necessity of the Notion, which must emerge as the foundation. It has already been pointed out that in the procedure of philosophic cognition, the object has not only to be presented in its Notional determination, the empirical appearance corresponding to this determination also has to be specified, and it has to be shown that the appearance does in fact correspond to its Notion" (Petry, vol. 1, 197).

knowledge have to be presented.[271] This should provide enough by way of an introduction to the connection Hegel sees between empirical experience, empirical sciences and "metaphysical" philosophy, or a category teaching. They are in a circular systematic relationship with each other, each supporting and helping to fulfill the other. Each are necessary for competent thinking, but each is inadequate alone.

4.3 HEGEL ON NATURE

Hegel thinks there are different ways of answering the question regarding what nature is. We can set out collecting facts about it, and this will lead us a part of the way. But Hegel does not think that we will ever know all the facts about nature.[272] So this approach alone leads to an infinite regress. We will see that nature has this and that characteristic, but never grasp what it is as an idea. This latter task belongs to the philosophy of nature.[273] As we have seen, Hegel views nature as a manifestation of mind. Yet, what he means by this is by no means mystical. Mind finds itself in nature, yet also sees nature as different from itself. And despite Hegel's view that we can attain "absolute knowledge", Hegel did not think, like Bacon, that we could know everything possible about nature or other aspects of the world. We can apparently continue collecting facts for an eternity without knowing them all. "Wir fangen an wahrzunehmen, wir sammeln Kenntnisse über die mannigfaltigen Gestaltungen und Gesetze der Natur; dies geht in ein unendliches Detail hinaus, hinauf, hinunter,

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[271] Hegel is looking for the possibility of a Ahard@ science of life, as Olaf Breidbach notes (Das Organische in Hegels Denken, 2). If Hegel is correct then its principles could also be derived from reason.

[272] Breidbach notes the precarious position of the biological sciences during the early nineteenth century. Various competing theories were struggling for dominance as natural philosophers attempted to move beyond merely classifying forms of life. Hegel, for his part, clearly saw fact gathering and classification as inadequate for describing life (Breidbach, Das Organische, 5).

[273] Hegel, Enzyklopädie, vol. 9, 12.

hinein, schon für sich; und eben weil kein Ende darin abzusehen ist, so befriedigt uns dieses Verfahren nicht."[274]

The task of natural philosophy is thus obviously not to reveal all the facts about nature and with that to say that the collection of all those facts is nature. But Hegel does mean to answer the question about what nature is here. Indeed he indicates that it is the purpose of his investigation here: "Was ist die Natur? In welchem Sinne wir dies hier fragen, indem wir die Philosophie der Natur kennenlernen wollen, dies ist es, was wir hier untersuchen wollen."[275]

But because this endeavor is to see the concrete idea, we cannot take direct flight to the philosophical idea. Hegel will explore the idea in its externality in nature, thus answering the question "what is nature?" similarly to the way he explores the idea in the logic: he will consider it in the respect to the determinations that become apparent in its development. The fundamental difference between the logic and the Real Philosophy is that the categories of the Real Philosophy apply to some things, but not all.[276] As Conrad Gaiser expresses this difference, the logic represents and Aontologia generalis@, the Real Philosophy and Aontologia specialis@.[277]

Taking a look at Hegel's application of the Trinitarian ideas as applied to the various parts of his Encyclopedia can help us to understand how Hegel metaphorically perceives the parts to hold

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[274] Hegel, Enzyklopädie, vol. 9, 12. "We begin to observe, and we collect data from the multifarious formations and laws of nature, which may be pursued for their own sake into endless detail in all directions; and because we can see no end to this procedure, it leaves us unsatisfied" (Petry, vol. 1, 194).

[275] Hegel, Enzyklopädie, vol. 9, 12. "What is nature? It is through the knowledge and the philosophy of nature that we propose to find the answer to this general question" (Petry, vol. 1, 194). Ilting draws attention to a broader goal of the Natural Philosophy. It does not merely investigate what nature is, it also attempts to show the connection of life to being as a whole (See Hegels Philosophie des Organischen, 368).

[276] Stace, The Philosophy of Hegel, 301.

[277] Conrad Gaiser, "Die Ursprünge des Idealistischen Natur begriffs bei Platon", 38.

together.[278] In a well-known passage from the introduction to the logic Hegel says that the content of the logic is "die Darstellung Gottes...wie er in seinem ewigen Wesen vor der Erschaffung der Natur und eins endlichen Geistes ist."[279] And as in God's head, so in God's world - to follow the metaphor further. So, as Hegel explores the question regarding what is nature, he will show how its determinations reflect the forms of the logic and how its various stages conform to those in the logic. To show Hegel's continued use the religious analogy:

> Gott hat zweierlei Offenbarungen, als Natur und als Geist; beide Gestaltungen Gottes sind Tempel desselben, die er erfüllt und in denen er gegenwärtig ist. Gott als ein Abstraktum ist nicht der wahrhafte Gott, sondern nur als der lebendige Prozeß, sein Anderes, die Welt zu setzen, welches, in göttlicher Form gefaßt, sein Sohn ist; und erst in der Einheit mit seinem Anderen, im Geist, ist Gott Subjekt.[280]

Here, as in traditional thought about the Trinity, God the Father is depicted as the transcendent aspect of the Divine Being, the Son as the Word made flesh and the Spirit as the transcendental unifying force of these two aspects. Demythologized this means that the categories depicted in the logic are reflected in nature and in mind. In thinking and action, mind sees its own categories in the world. We can correspondingly understand Hegel's view of the purpose of the philosophy of nature: "Dies ist nun die Bestimmung und der Zweck der Naturphilosophie, daß der Geist sein eigenes Wesen, d.i. den Begriff in der Natur, sein Gegenbild in ihr finde."[281]

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[278] In this conversation of the organism it is perhaps easy to loose sight of the forest through the trees. In part Hegel is merely arguing for a form of holism. Hegel views the world as a unity, and thinks that we can perceive it as such. We will attain a reconciliation of the divisions of the whole, not through metaphysical flights of fancy or mysticism, nor thorough political change alone. Hegel reiterates that the Areconciliation@ of difference is one that occurs in thought, even if political changes, among other developments, are among the necessary preconditions for this.

[279] Hegel, WdL, I, 33-4; Miller, 50. "...the exposition of God as he is in his eternal essence before the creation of nature and a finite mind."

[280] Hegel, Enzyklopädie, §246, add. "God has two revelations, as nature and as spirit, and both manifestations are temples which He fills, and in which He is present. God as an abstraction is not the true God; His truth is the positing of his other, the living process, the world, which is His Son when it is comprehended in its divine form. God is subject only in unity with His other in spirit" (Petry, vol. 1, 204).

[281] Hegel, Enzyklopädie, §246, add. "The determination and purpose of the philosophy of nature is therefore that spirit should find its own essence, its counterpart, i.e. the Notion, within nature" (Petry, vol. 1, 204). In Marcuse>s words, AThe world is an estranged and untrue world so long as man does not destroy its dead objectivity and

As a reflection of the logical categories, the natural philosophy will reflect the same levels of differentiation as we find in the logic.[282] The natural philosophy is divided into three main areas: 1) mechanics, the study of material and its ideal system, which reflects the level of determination of the Logic of Being; 2) physics, the study of physical forms, which reflects the determinations of the logic of reflection, the Logic of Essence;[283] and 3) organics, the study of life forms of nature, which reflects the level of determination of the idea, the Logic of the Notion.[284]

Hegel presents nature according to this logical pattern as a system of levels, which are considered a "living whole" (lebendiges Ganze). It is not merely organic nature which is presented as living here; instead we see the application of the logical concept of "life" and of "organism". The "living whole" consists of organic and non-organic nature. This whole forms a great chain of being.[285] It will behoove us to examine the quote in detail given the significance of this view, both for showing Hegel's view of nature and for indicating the difference between his logical views of "life" and "living whole" and his "natural" ones.

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recognize himself and his own life `behind´ the fixed form of things and laws. When he finally views this self-consciousness, he is on his way not only to truth about himself but also of his world@ (See Reason and Revolution, 112,13). Quoted in Flay, Hegel's Quest for Certainty, 298.

[282] Hösle notes some of the main differences between the categories of the logic and those of the Real Philosophy. Besides the fact that the categories of the logic are supposed to apply to all of reality while those in the Real Philosophy are more concrete, as I have already mentioned, in contrast to logical categories, those in the Real Philosophy are not self-related; and they correspond to space and time. Hösle sometimes maintains that the categories of the logic need to include those necessary for all aspects of reality; thus he argues for including intersubjectivity among the logical categories. Yet, at the same time, he seems to think that the Real Philosophy can include some categories not developed in the logic. This seems paradoxical, if not contradictory (See, Hegels System, 100-123).

[283] Hegel, Enzyklopädie, §274, add.

[284] Hegel, Enzyklopädie, '252. Hegel also argues that each of the greater parts of the logic correspond to the sections of the Natural Philosophy, the mechanics paralleling the logic of being, the physics paralleling the logic of essence and the organics paralleling the logic of the notion. It proves quite difficult to maintain this correspondence. (See Wandschneider, "Anfänge des Seelischen in der Natur in der Deutung der hegelschen Naturphilosophie und in systemtheoretischer Rekonstruktion," 54.)

[285] For a thorough treatment of this concept see Author Lovejoy, The Great Chain of Being.

> Die Natur ist als ein System von Stufen zu betrachten, deren eine aus der andern notwendig hervorgeht und die nächste Wahrheit derjenigen ist, aus welcher sie resultiert, aber nicht so, daß die eine aus der andern natürlich erzeugt würde, sondern in der inneren, den Grund der Natur ausmachenden Idee. Die Metamorphose kommt nur dem Begriff als solchem zu, da dessen Veränderung allein Entwicklung ist. Der Begriff aber ist in der Natur teils nur ein Inneres, teils existierend nur als lebendiges Individuum; auf dieses allein ist daher die existierende Metamorphose beschränkt. [286]

In this quote Hegel takes pains to distinguish between the logical development of the idea that he will present in his philosophy of nature and the development or evolution of beings in nature. For while he accepts the former, he rejects the latter. The necessary development that he will present in this section of his philosophy is not to be confused with real transitions of beings in nature: "Die Metamorphose kommt nur dem Begriff als solchem zu." It is not a "natural" engendering.[287]

One of the continually recurring problems in the Hegel literature that this quote helps to properly interpret concerns the relation of the forms of logic to ontology. It is often argued, on the basis of Hegel's references to the divinity of nature (for example), that he views an absolute parallel between the developments in the logic, viewed as "God's ideas", and in the world, viewed as "God's incarnation". But here Hegel obviously sees a difference between the realms. The fact that there is a logical development and that the world shares the forms of the logic does not mean that the

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[286] Hegel, Enzyklopädie, §249. "Nature is to be regarded as a system of stages, the one proceeding of necessity out of the other, and being the proximate truth of that from which it results. This is not to be thought of as a natural engendering of one out of the other however, but as an engendering within the inner Idea which constitutes the ground of nature. Metamorphosis accrues only to the Notion as such, for development is nothing but the alteration of the same. In nature the Notion is however partly a mere inner principle, and partly an existence which is simply a living individuality; existent metamorphosis is therefore limited solely to this individuality."

[287] Hegel Enzyklopädie, §251. "The metamorphosis applies only to the concept as such" (trans. DPA). Hösle notes that Hegel has a correspondence between time and AGeist@ and space and nature. So, the development of nature is not considered temporal. As Hegel says, ADie Weltgeschichte...ist also überhaupt die Auslegung des Geistes in der Zeit, wie die Idee als Natur sich im Raume auslegt@ (Werke, vol. 12, 96. Quoted in Hösle, ATiere und Pflanze@, 384.) Hegel>s discussion of non-essential changes in organisms because of environmental conditions may raise questions about Hegel>s consistency, since such changes are obviously in time. Löthar views this contrast between realms of time and space as a fundamental contradiction in Hegel that could be overcome with the integration of evolutionary theory. So, he clearly sees evolution, not as excluded by Hegel>s general theory, but as more consistent with it than the biological position Hegel in fact embraced. (S. Rolf Löther, AHegels Bild der lebenden Natur und die Biologie@, 262.)

development of the two levels are the precisely same. Here he merely is pointing to the parallels he views as necessary for logically ordering the world of nature into a rational, systematic whole. But the development of the one level does not imply the development of the other in a literal sense. The necessary movement from one sphere to the next is one of the logical level of analysis. But the world for its part does not evolve from one form into another. The fact that the world is comprehended as existing in dialectically interrelated levels does not mean that this logical development occurs in nature. "Solcher nebulöser, im Grunde sinnlicher Vorstellungen, wie insbesondere das sogenannte Hervorgehen z.B. der Pflanzen und Tiere aus dem Wasser und dann das Hervorgehen der entwickelteren Tierorganisationen aus den niedrigeren usw. ist, muß sich die denkende Betrachtung entschlagen."[288]

Hegel is no proponent of evolution.[289] And while he often then considered "dated" for not having embraced this theory, seeing that he differentiates between logical development and physical development in reference to evolution theory can help one to avoid fully equating thought with nature as is done in hard ontological readings. This allows us to clarify a certain confusion that can also easily enough arise about Hegel's organic view of this science or of the entire Encyclopedia. In maintaining that these systems are "living wholes" he does not mean that all the items they deal with are "living" in a conventional sense any more than he thinks that development in the logic implies

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Although Hegel merely offers a view of an Aideal development@ within nature, this set the tone for the adoption of evolutionary theory (267).

[288] Hegel, Enzyklopädie, §249. "Thinking consideration must reject such nebulous and basically sensuous conceptions as for example the so-called emergence of plants and animals out of water, and of the more highly developed animal organizations out of the lower etc."

[289] There were, of course, good reasons not to accept evolutionary theory. Darwin himself rejected his forerunners theories as mere fancy. Numerous problems had not been clarified. It was not clear how the changes could have occurred in the short time period that the earth was thought to exist; nor was it clear how organs developed for specific functions. How did a creature evolve the wings necessary for flying, for example? Some of the going explanations of these kinds of things were quite far-fetched. Marllet, for one, suggested that flying fish had lost their scales and grown feathers. Such nonsense, seemed to Cuvier, and others, to betray a total lack of understanding of anatomy. Cuvier spoke for many when he said of proponents of evolutionary theory: A...from the moment these authors wished to enter into detail they fell into ridicule@ (Quoted in Burkhardt AThe Spirit of System@, 198; from Cuvier ALecon d'anatomie Comparee>@ 2nd ed., 1,101) As is well known, Darwin spent over twenty years gathering detailed information in support of evolutionary theory because he thought the already-existing theories severely failed in this respect.

a literal development of forms in nature. For he does clearly distinguish here between living and non-living material beings. And he insists that this development of the idea in nature is not to be interpreted as supporting a view of evolution. This is perhaps easier to see in relation to other texts: "Die Natur ist an sich ein lebendiges Ganzes; die Bewegung durch ihren Stufengang ist näher dies, daß die Idee sich als das setze, was sie an sich ist..."[290]

That nature is a "living whole" does not mean that rocks are not inorganic, or that they turn into vegetables as the idea develops - to take one example. For were Hegel to imply that the application of the concept of the "living whole" here to all of nature meant that this was to be interpreted as meaning rocks are organic in the sense that we ordinarily understand "organic", then he would clearly contradict himself by even dealing with "inorganic nature". But just as the logical concept of "development" used in reference to the idea does not imply that nature actually undergoes transitional changes from one level to another, neither does the use of the concept of the "organic whole" in reference to nature mean that we cannot speak of inorganic nature. What it shows us is that Hegel means something different by his concept of the "organism" than we may at first suspect. Nature is a series of levels and it is an organic whole, but the levels are levels of logical order; and that it is an organic whole means that it is organized logically into a form in which the whole and parts are intricately connected, both serving as means and ends for each other.

Although all objects taken as a whole do constitute an organism, not all objects themselves are organisms. The organism of nature is comprised of various sorts of objects - mechanical, chemical and organic. Altogether, these organic and non-organic things constitute an organism; and of all the objects analyzed by the natural sciences only those at the level of organic being are themselves organisms.

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[290] Hegel, Enzyklopädie, §251. "Nature is implicitly a living whole; more closely considered, the movement though its series of stages consists of the Idea positing itself as what it is implicitly..."

Having shown then what Hegel means in saying that the whole of nature is an organism, I shall now turn to an examination of his views of organisms in nature in section three of the Philosophy of Nature, entitled "the organics".

4.4 THE ORGANICS – AND THE GEOLOGOGICAL ORGANISM

Hegel here treats three types of organisms: the geological organism, the vegetable organism and the animal organism. Of these, only the latter two are ensouled, living entities. The fact that the geological organism is not living is again clear evidence that Hegel thinks of objects other than living, natural ones as organic. Each of these types of organisms forms a particular abstraction. The geological organism represents the shape of life, a universal type of life, and the "mere immediacy of the idea". A particular formal subjectivity is represented by the vegetable organism. Animal organism represents concrete subjectivity.[291]

In describing what geological nature is, Hegel once again clearly shows that he intends a difference between his organism concept and living organisms in nature: "Der erste Organismus, schon insofern er zunächst als unmittelbarer oder an sich seiender bestimmt ist, existiert nicht als Lebendiges...."[292] This quote raises a two particular issues. First, here Hegel refers to geological nature as "the first organism". Yet, given that he has already referred to the whole natural philosophy as a "living whole", it does not appear to be the first organism at all. Second, as mentioned, he differentiates clearly between that class of living things and that class of organisms.

First things first. Before this text Hegel has not only said that the philosophy of nature was an organism; he has also said that the field of physics was an "organic whole", not a simple

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[291] Hegel, Enzyklopädie, §337.

"aggregate".[293] Additionally, throughout his Encyclopedia he has referred to a plethora of different sorts of organisms, the logic, the idea, etc. Thus, it would seem that we need to understand the geological nature, not as the first organism that he has discussed, but as the first organism able to be treated as such by the natural sciences. Although we understand this first organism with the tools of mechanics and not biology, we integrate it into our study of biological life, because it is a basis for biological life.

This leads into the second point (which by now certainly should not be the least bit surprising for us). Hegel is once again clearly distinguishing between logical organisms and ensouled ones. The geological organism is not yet an ensouled organism, for it does not live in the sense that a plant or animal does. Nevertheless, it is the object of organics and it is an organism. The question is: what characterizes it as such?

While the geological organism comprises the first form of "life", it is also, as the mere immediacy of the idea, "the corpse of the living process";[294] or as he says of the solar system, it is a "mechanical organism" ("Organismus des Mechanismus");[295] he also calls it "the terrestrial organism".[296] It lacks soul: it is not an ensouled living body, but "the universal system of individual bodies".[297] It is comprised of the non-souled chemical elements, but serves as the basis for ensouled organisms. It is the "presupposition" for life.[298] As a whole, comprised of interconnected parts, and as a system necessary for the emergence of ensouled beings, this is the first entity to be treated as an organism by the natural sciences.

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[292] Hegel, Enzyklopädie, §338 "The primary organism, in so far as it is initially determined as immediate or implicit, is not a living existence...."
[293] Hegel, Enzyklopädie, §246.
[294] Hegel, Enzyklopädie, §337.
[295] Hegel, Enzyklopädie, §337, add.
[296] Hegel, Enzyklopädie, §338.
[297] Hegel, Enzyklopädie, §338.
[298] Hegel, Enzyklopädie, §341, add.

Like all organic beings, it "ist das Wirkliche, das sich selbst erhält und den Prozeß an ihm selbst verläuft; es ist sich sein Allgemeines, das sich in seine Teile entzweit, welche sich aufheben, indem sie das Ganze hervorbringen."[299] It is a self-identical whole, but still one which stands at the gap between the mechanistic-chemical world and the ensouled organic one; so it is that we find such references to it as the "mechanical organism" or the "crystal of life".[300]

The solar system reflects clearly the logical idea of an organism, but it is not an ensouled organism:

> Der abstrakte Begriff des Organismus ist dagegen, daß die Existenz der Besonderheiten, indem diese als vorübergehende Momente eines Subjekts gesetzt sind, der Einheit des Begriffes angemessen ist, während im System der himmlischen Körper alle besonderen Momente des Begriffs für sich frei existierende, selbständige Körper sind. Das Sonnensystem war der erste Organismus; er war aber nur an sich, noch keine organische Existenz.[301]

This is simply another way of thematizing what I have called the difference between ensouled and non-ensouled organisms. Here such a non-ensouled organism is called an organism "without organic existence". While being self-contradictory if taken literally, the meaning is the same as in the terminology I have been using. And the geological organism is precisely the type of non-ensouled one.

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[299] Hegel, Enzyklopädie, §342, add. "is actual being which is self-maintaining, and which runs through the process in its own self. It is its own universal, and sunders itself into its parts. These parts supersede themselves by bringing forth the whole."

[300] Hegel, Enzyklopädie, §341.

[301] Hegel, Enzyklopädie, §337, add. "On the contrary, in the abstract Notion of the organism, the existence of particularities is compatible with the unity of the Notion, for these particularities are posited as transitory moments of a single subject. In the system of the heavenly bodies however, all particular moments of the Notion exist freely for themselves as independent bodies which have not yet returned into the unity of the Notion. The first organism was the solar system; it was merely implicitly organic however, it was not yet an organic existence" (Petry, vol. 3, 11).

But why call the earth or solar system organic at all? (Hegel calls both of them organisms and even at times seems to refer to each as the geological organism.)[302] Obviously Hegel could have drawn his definitions differently. He could have said that organisms are just those things with souls. Other things, like the geological world or state or scientific system are organism-like. But apparently in thinking out the commonalties between these sorts of things he found enough of the things alike that he decided the category ought to include all living or non-living things with the mentioned sort of organizational unity, then he divided this broad set of organisms into sub-sets of ensouled and non-ensouled ones. We have examined this in the logic.[303]

In Hegel's description of the transition to the organics the fundamental characteristics of the organism are explicated :

> Das gleichgültigbestehende Körperliche ist dadurch nur als Moment der Individualität gesetzt, und der Begriff in der ihm entsprechenden Realität; die in einem aus der Besonderung der unterschiedenen Körperlichkeiten sich hervorbringende konkrete Einheit mit sich, welche die Tätigkeit ist, diese ihre einseitige Form der Beziehung auf sich zu negieren, sich in die Momente des Begriffs zu dirimieren und zu besonderen und ebenso in jene Einheit zurückzuführen, - so der unendliche sich selbst anfachende und unterhaltende Prozeß - der Organismus.[304]

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[302] In speaking of the geological organism Hegel sometimes seems to have the solar system in mind, sometimes the earth. In §341 he calls the earth a "crystal of life". In the addition there – in his introduction to the geological organism – he also refers to the earth as a geological organism, writing explicitly of "der geologische Organismus der Erde". Yet in §337, add. he refers to the solar system as the "mechanical organism" and as the "first organism", a reference he appears in §338 to reserve for the earth, not the solar system. (See the previous quote.)

[303] One other possible reason, for this, as Hösle suggests, may be that Hegel wanted to retain his triad organizational form in the organics. (See APflanze und Tiere@, 391). To his credit Hösle also proposes the logic of such a division. As the Abasis@ for living things it makes a certain sense to analyze the geological whole with those living things. This insight even makes more sense on the basis of ecological theory.

[304] Hegel, Enzyklopädie, §336. "Corporeality which subsists as being indifferent is posited as a mere moment of the individuality therefore, and the Notion is posited in the reality which corresponds to it. This concrete unity with self, which brings itself forth from the particularization of the different corporealities into a whole and by its activity negates the one-sided form of its self-relatedness and leads the moments of the Notion back into unity while dividing and particularizing itself into them, is the organism."

The geological organism, like other organisms, living or non-living, consists of a process in which the moments or parts comprising it are both differentiated from one another, but then finally brought back into a unity. The whole is more than the sum of the parts; it consists of the parts in a particular organizational pattern. Hegel tells us that the individual parts in such a whole do not remain irrelevant (gleichgültig) to one another; rather, the inter-relation of the parts takes on a sort of interest for the whole, as the parts are only in the last analysis understandable and able to be preserved in their mutual relationship.

Unfortunately, the language use here is riddled with anthropomorphism. What sort of an interest can a part have for another part really? Hegel slips here with his language use; and I think there is no other way to see what he is doing here, for he really is not ascribing mystic qualities to the elements of the earth here. He seems to mean that we can only understand the system when we see the interaction of the parts, that they do not exist in isolation from one another, but that they need each other for their mutual existence. Insofar Hegel says this here, he is not making a point much different than that of some modern ecologists. But Hegel does slip again and again into a sort of esoteric language use.

The goal of the whole, as Hegel tells us elsewhere, becomes the preservation of the parts, and the goal of the parts becomes the preservation of the whole. In other words, the self-preservation of the whole requires the self-preservation of the parts. In the case of the earth, the parts of this whole are the chemical elements. But the main divisions of the earth are: 1) the atmosphere; 2) the sea; and 3) the land.[305] In short, Hegel's point is that the climate, air pressure, and other atmospheric phenomena are closely connected with the ebb and flow of the seas, and other such phenomena. This all has a mutual relationship with the origin and preservation of living things, both on the earth and

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[305] Hegel, Enzyklopädie, §341. I shall not go into the details of the interaction of the earth's parts here, but shall focus on the plant and animal organisms, because for the purpose of understanding the organism concept the other nexus of organisms of nature is more revealing still.

in the seas. Although Hegel does not have the explicit concerns of the later ecologists, who to a large extent developed their sensitivities in relationship to industrialization and the damages done to the earth, the logical consequences of Hegel's presentation here support some of their basic views: the earth and its life forms comprise a connected system.[306]

The earth is demonstrated to be a historical object, which has undergone changes in its history due to its place within the solar system, its axis of orbit and multiple other factors. Given this nexus of relationships certain changes have occurred, division of land masses, formation of mountain ranges, etc. For their part, the sorts of life present in the various regions of the earth also reflect these changes in geographical formation.[307]

To understand the earth as the sort of whole that it is, it is necessary to see it in connection to the other dead objects of the solar system. Although the planets are obviously external from the earth, earth exists in a necessary relationship with them. It is mutually dependent upon the elements in the solar system: "ihre Existenz verdankt sie nur jenem fortdauernden Zusammenhange; fehlte eines der Momente, so hörte die Erde auf, zu sein, was sie ist. Die Erde erscheint als das tote Produkt; sie wird aber durch all diese Bedingungen erhalten, die eine Kette, ein Ganzes ausmachen."[308] The process of its formation, nevertheless, does not reside within it, so it like the solar system is a "mechanical organism".

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[306] Hösle also notes that Hegel's views in the natural philosophy pre-empt many of the views of later ecologists. See, Hegels System, 320ff.

[307] Hegel, Enzyklopädie, §339.

[308] Hegel, Enzyklopädie, §339, add. "If any one of these relations lapsed, the Earth would cease to be what it is. The Earth appears as the dead product of these relations; but it is maintained by these conditions, which form a single chain or whole."

4.5 THE VEGETABLE ORGANISM

At each respective organic level of nature the idea of the organism becomes more and more concrete and better mirrors the fully-developed concept of the organism. So plant life is a better example of the idea of the organism than is the earth. The animal will mirror this better still.

At the level of the plant, indeed at the level of ensouled life in general, Hegel notes, "all the determinations of the understanding cease to be valid".[309] We apparently have arrived at the level of thought for which reason is appropriate. These sort of organic beings better reflect the higher principles of thought than do chemical aggregates. In particular a new plateau is attained with the plant. It has an "ideality" which is lacking in the geological organism because it is able to transform matter with its organic forms.[310] It has a complex system of assimilation by which it transforms the external into itself.

The plant is described as "subjective animation in its primary immediacy."[311] It has an advanced form of animation, but does not reflect the concept of the organism as well as an animal because the great differentiations between its parts and the whole cannot be clearly seen: "Bei der Pflanze also sind die Glieder nur Besondere gegeneinander, nicht zum Ganzen; die Glieder sind selbst wieder Ganze, wie beim toten Organismus, wo sie auch in Lagerungen noch außereinander sind."[312] Hegel has in mind here the fact that in certain plants the roots and branches, for example, are interchangeable. If one uproots a plant and put its branches in water, the former branches will

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[309] Hegel, Enzyklopädie, §343, add. The entire quote is: "Das ursächliche Verhältnis fällt hier also weg, wie überhaupt alle Verstandesbestimmungen im Leben nicht mehr gelten."

[310] Hegel, Enzyklopädie, §343, add.

[311] Hegel, Enzyklopädie, §343. The entire quote: "In der Pflanze, der nur erst unmittelbaren subjektiven Lebendigkeit, ist der objektiven Organismus und die Subjektivität desselben noch unmittelbar identisch..."

[312] Hegel, Enzyklopädie, §343, add. "The members of a plant are only particular in relation to one another, ...not in relation to the whole. These members are wholes in their own right, as they are in the inanimate organism, where they are still external to one another in stratifications."

become roots, the former roots branches. Each member can take on the role of other members. There are not fixed differentiations. Michelet quotes Goethe on this point:

> Je vollkommener das Geschöpf ist, desto mehr sind diese Teile einander gleich oder ähnlich, und desto mehr gleichen sie dem Ganzen. Je vollkommener das Geschöpf wird, desto unähnlicher werden die Teile einander. In jenem Falle ist das Ganze den Teile mehr oder weniger gleich, in diesem das Ganze den Teilen unähnlich. Je ähnlicher die Teile einander sind, desto weniger sind sie einander subordiniert. Die Subordination der Teile deutet auf ein vollkommeneres Geschöpf.[313]

Goethe had argued that there is an original living being (Urplänze, Urtier) of which all existing plants and animals are just derivations.[314] The most complex of animals or plants represents this ideal the best, showing a clear differentiation of the parts. Correspondingly, the less differentiation able to be seen, the further the plant or animal is from the ideal version. Perfection is seen in the abstract in the ideal plant; however, all real plants are mere variations of this morphological model. At first Goethe thought that he could find such a model plant or animal in the real world. In time, however, he became convinced that it was merely an ideal mental model, which allows us to correctly compare the parts of various sorts of living beings according to their morphological structure.[315] Still, the more advanced the living thing the better we can see the distinction of the parts. For this reason, animals serve as better models than plants. Hegel shared this view, so Michelet's quote is quite appropriate here. Hegel, however, never entertained the fanciful view that we might find real exemplars of such an ideal model in nature.

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[313] Quoted in Petry's translation of The Philosophy of Nature, 46. Michelet had inserted it in his edition of Hegel's work. S. Goethe, Die Metamorphose der Pflanzen -In: Sämtliche Werke, vol. 12, 14. "The more imperfect the creature, the more similarity there is between its parts, and the more they resemble the whole. The more perfect the creature, the more dissimilar the parts become. In the first case the whole is more or less the equivalent of the parts, while in the second case the whole is not the equivalent of the parts. The more the parts resemble one another, the less they are subordinate to one another. The subordination of the parts is an indication of a more perfect nature."

[314] St. Hilaire had adopted this theory prior to Goethe. He had also placed it in the context of a developmental evolutionary theory of animal development, which, of course, neither Hegel nor Goethe adopted (See Löther, "Hegels Bild der lebendigen Natur und die Biologie", 264). Lovejoy credits Robinet with being the first to elaborate the theory of an AUrbild@ (See The Great Chain of Being, 279).

Hegel takes pains to point out the parallels among the various forms of life, not only according to their morphological structure, but also according to general functions and processes. And while Hegel thinks the higher forms of life reflect reason (and thus the ideal morphological exemplar) more fittingly than the lower forms (and that animal life presents us with the best model for seeing reason in nature), a comparison of the processes at the level of plants and animals should prove revealing, showing further parallels between different sorts of organisms.

In the Encyclopedia the process of plant life is shown to be broken down into three sub-processes, also shared with the animal organism:[316] first, the process of formation;[317] second, the process of assimilation;[318] third, the generic process.[319]

Among the commonalties of organic things Hegel mentions, the unity with difference is again stressed: "all organic being differentiates itself within itself, and maintains the unity of multiplicity"[320] Yet, it has various differences from the animal organism: it is tied to a particular place, not having the freedom of movement that animals have.[321] It's nutritional process is also different than that of animals: unlike animals, which feed, then process the food, then feed again, etc., the plants nutritional process is one of continuous flow. It is dependent upon the earth's nutrients, the water and sun, and it is continually nourished by them.[322]

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[315] Because the foundations for cell theory were first developed by Schleiden in 1842, Hegel could not point out the similarities in cell structure (See Breidbach, Das Organische in Hegels Denken, 37ff).

[316] Hegel introduces his view of the vegetative organism in §343 through §346

[317] This is treated in §346a.

[318] This is treated in §347.

[319] This is treated in §§348- 349.

[320] Hegel, Enzyklopädie, §344, add. "Alles Organische ist das in sich selbst sich Unterscheidende, das die Mannigfaltigkeit in der Einheit erhält."

[321] Hegel, Enzyklopädie, §344.

Although Hegel relies on C.H. Schultz[323] for most of his information about plants, he greatly praised Goethe for his Metamorphosis of Plants, his trailblazing work in morphology. Hegel credits him with introducing a rational conception of nature, noting the changes initiated by Goethe in mainstream natural science, but seeming to have been unaware of earlier attempts such as those of St. Hilaire to spread similar ideas. Both Goethe and St. Hilaire saw the development of the plant as occurring in accordance with a basic plant type. But Goethe's work had a broad influence, especially in Germany.[324] His efforts resulted in a widespread turn away from analysis of mere details of plants towards an approach in which a model of morphology was developed and parallels were sought among various life forms. In metamorphosis the identity of similar organs is dominant and great emphasis is placed on finding out the function of particular members of a plant.[325]

Here too, though, instead of focussing on the similarities of parts, on the sort of physiological constants that Goethe emphasized, Hegel focuses on functions. Regarding the similarities in plants and animals Hegel stresses: "Wie in allem natürlichen und geistigen Lebensprozeß ist die Hauptsache in der Assimilation, wie in der Sekretion, die substantielle Veränderung, d.i. die unmittelbare Verwandlung eines äußeren oder besonderen Stoffs überhaupt in einen anderen..."[326] Plants, like animals and human cultural systems, change the material world by assimilating it. In the case of plants, they take the elements of the earth, water and sunlight and incorporate these external objects into themselves, forming themselves through them.[327] All natural organisms and spiritual processes do this. They assault nature and transform it in incorporating it into themselves.

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[322] Hegel, Enzyklopädie, §344.

[323] See Schultz, C.H. Die Natur der lebndigen Pflanze. Berlin, 1823.

[324] For more on this see E. S. Russel, Form and Function, Chicago: U Chicago P, 1982, c. 1916.

[325] Hegel, Enzyklopädie, §345, remark.

[326] Hegel, Enzyklopädie, §345, remark. " ...as in every natural and spiritual life-process, the crux of the matter in both assimilation and secretion, is the substantial change, i.e. the general immediate transformation of one external or particular material into another."

[327] The difference between plant and animal assimilation is essentially that most plants are autotrophic, being nourished by inorganic matter, whereas animals are heterotrophic, receiving nourishment from organic matter (See also Hösle, APflanze und Tiere@, 398).

Interesting here is Hegel's reference to this process as the "crux of the matter". Goethe also mentions functional similarities like this, but for Goethe the crux of the matter seems much more to be the physiological rather than the functional similarities. Hegel's later references to Goethe reveal this, showing how he approaches physiological matters in his comparative morphology.[328] Indeed Hegel deals at length with matters of comparative physiological morphology. Like Goethe, he begins, for example, speaking of the plant as constituted by a node or germ, which them splits up into numerous individual germs, "each of which is a whole plant". Hegel has in mind here the interchangeability of parts of plants earlier mentioned. He writes: "An der Pflanze unterscheiden wir Wurzeln, Stamm, Zweige und Blätter. Es ist aber nichts bekannter, als daß jeder Ast und Zweig ein vollständiges Gewächs ist, das seine Wurzel in der Pflanze wie im Boden hat, abgerissen davon und als Absenker in den Boden gesetzt, Wurzeln treibt und ganze Pflanze ist.[329] He adds: "Eine Pflanze ist so eigentlich ein Aggregat einer Menge von Individuen, die ein Individuum ausmachen, dessen Teile aber vollkommen selbständig sind."[330]

Goethe sets out to show these similarities and that each member can easily assume the role of the other. He then explains the difference between the parts as merely one of "expansion" and "contraction". His view reflects the idea espoused by Hegel: "In their existence, the parts are intrinsically the same."[331] To further substantiate this argument, Hegel notes, among other things, cases of plants growing from leaves and cases of the transformation of parts when full grown plants are uprooted and planted upside down.[332]

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[328] Hegel, Enzyklopädie, §345, add.

[329] Hegel, Enzyklopädie, §345, add. "In the plant we distinguish between roots, stem, branches and leaves. Nothing is more generally realized however, than that each branch and each twig constitutes a complete plant, which has its root in the plant as it does in the soil, and when a branch or twig is broken off and layered, it puts forth roots and constitutes a whole plant."

[330] Hegel, Enzyklopädie, §345, add. "Strictly speaking therefore, a plant is an aggregate of a number of individuals constituting a single individual, the parts of which are however completely independent."

[331] Hegel, Enzyklopädie, §345, add. See, for example, Goethe, Zur Morphologie, I.I nr. 115.

[332] Hegel, Enzyklopädie, §345, add.

The plant consists of three processes: form, assimilation and regeneration. Just as the parts of the plant are less differentiated than in the animal, so too are the processes. Thus, it is difficult to precisely distinguish them and to describe the nature of the vegetable organism.[333]

In its development of form the plant has some differences from animals. The process of formation of a plant is not so advanced as that of an animal, for the processes by which it sustains itself are not internalized to the same degree. Instead, its processes are more related to things external to it. On the one hand, there is its substantiality: it has no stomach and means of storing its nutrition within it, but it gets continual influxes of nutrition from outside of it - the elements, sun, water, etc.[334] It does however transform its sap, or "vital sap", as Hegel says, into its formations. These two phases constitute a plant's substantiality. On the other hand, the plant also has self mediation. The germ of the plant develops outward in roots and leaves. Internally it develops "wood fiber", which constitutes its form and makes "internal circulation" possible. It grows from its germ, eventually preserving its genus through the production of a new individual, its bud.

Although Hegel criticizes some of Oken's wilder speculations about the similarity of plants and animals as "dated", he nonetheless draws some fanciful parallels between plants and animals that were typical at his time. The plant's sap, which circulates throughout it, sustaining it in its growth, "corresponds to the circulation of the blood in animals."[335] So too, although he rejects Oken's view that spiral vessels are for the plant what nerves are for the animals, he Acorrects@ it by saying, "the wood fibers are not nerves however, they are bones."[336]

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[333] Hegel, Enzyklopädie, §346, add.
[334] Hegel, Enzyklopädie, §346 a.
[335] Hegel, Enzyklopädie, §346 a, add.
[336] Hegel, Enzyklopädie, §346 a, add; S. Petry's edition, p.80 and endnotes. See Oken, Lehrbuch der Naturphilosophie Jena, 1908-11.

Despite the fanciful character of some comments, singular observations indicated differences that would be important for later developments. According to Petry, Hegel heightened the awareness of the difference between cells and their fluid content in the cellular tissue as well as the contrast between the "vital sap" in the vascular system and the spiral vessels and wood sap in the assimilative system. Hegel was correct in pointing in this direction, and the recognition of such differences was important for the later discovery that vessels have their origin in the cells.[337]

In general Hegel's efforts here reflect those of other morphologists of the time, who got caught up in an attempt to find all sorts of parallels of design.[338] Hegel, however, seems the whole time more interested in parallels of function, as would better suit his stated purpose of focussing on the philosophical element in nature. The main heading of all his chapters correspondingly here deal with general functions, which are also concepts from his logic: form, assimilation, regeneration. The brunt of the physical comparisons of parts, such as those evident in the above quotes, are secondary, reserved mostly for his additions to the chapters.

Having discussed some particularities of plant form, he next turns to the assimilation process.[339] The form of the plant only undergoes development if it is stimulated from without. In fact, the development of the plant outward is directed towards its sources of assimilation, and in two directions: on the one hand, its roots develop downward towards its source of mineral deposits in the earth; on the other hand, its leaves grow upwards towards the sun and air.[340] Assimilation is something of a motor for its development.

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[337] See Petry, footnote, p. 285.

[338] Of course, it only stands to reason that these attempts of morphologists also led to some positive results. As little as was known about plants or animals it often paid off to look for additional parts. That it did not always pay off is, however, at least equally clear. The attempts of such morphologists, however, offer an compelling example of how an obviously false theory can lead to scientific progress.

[339] Hegel, Enzyklopädie, §347.

[340] Hegel, Enzyklopädie, §347.

Given the connection here between form and assimilation, the difference between the two processes is minimal in plants. "Das in der Gestalt vorhandene Selbst geht in den Prozeß nach außen ein, um sich durch diese Vermittlung mit sich selbst zu vermitteln, das Selbst zum Selbst hervorzubringen."[341] This development however does not result in a unified self-relatedness. It always relates to light as a part of itself. Light is thus referred to as "the second self to which the plant, in accordance with the Notion, has to relate itself".[342]

Finally, even the third process of the plant, that of regeneration, is merely the consequence of the development of this formation. So the distinctions between the processes in plants are vague and somewhat superficial according to Hegel.[343] In plants the processes of formation and assimilation contain the possibility for reproduction. This is clear, to use an example invoked earlier in the text, from the fact that leaves or various parts of the plant can themselves grow into the whole plant; and this irrespective of whether the individual plant form is a male or female of its variety or "hermaphroditic", being both male and female. Given that plants can be regenerated by pruning, Hegel thinks that the differences in the sex of plants are not vital to a plants individuality. To put it in perhaps a modern dressing: they can be very simply cloned, and indeed without the need for a plant of the other sex. The processes of the vegetative organism lack the distinctions and development of those of the animal organism. In moving to the animal organism, or what Hegel also calls the "true organism",[344] we shall see that it best matches the concept of the organism. The distinctions between the parts, which are maintained even in the unity of the whole, are most clearly expressed at that level.

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[341] Hegel, Enzyklopädie, §347, add. "The self which is present in the shape enters into the process outwards in order to accomplish its self-mediation, and so bring the self forth for the self."
[342] Hegel, Enzyklopädie, §347, add. "...das zweite Selbst, zu dem die Pflanze sich dem Begriffe nach verhalten muß, ist außer ihr..."
[343] Hegel, Enzyklopädie, §347, add.
[344] Hegel, Enzyklopädie, §349.

4.6 THE ANIMAL ORGANISM

Hegel deals with the same processes in the animal organism as in the vegetative one. This is a part of his functional "morphology": here too we have shape, including the process of formation,[345] assimilation[346] and the generic or reproductive process.[347] This latter includes a treatment of sickness and death, which is the phase in which the individual animal organism returns to the chemical process, losing its life. At this stage, however, the species power lives on in the reproduced individuals.

Encyclopedia sections 350-353 offer an introduction to the view of the animal organism that Hegel explicates in the later sections. The animal is a subjective individual. It is a form, with different members that sustain themselves (and the form as a whole) only by turning outwards and assimilating the external world.[348] Fundamental here is once again the emphasis on the unity of the diverse parts and on how assimilation sustains this process.

In so far as the animal's members are simply moments of its form, and are perpetually negating their independence and withdrawing into a unity (existing for this unity), the animal is the existent idea. But the unity can be severed: if, for example, a finger is cut off, a process of chemical decomposition sets in and it ceases to be a finger. The unity which is produced is the implicit unity of the animal. This implicit unity is the soul or notion, which is present in the body in so far as the body constitutes the process of idealization.[349]

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[345] Hegel, Enzyklopädie, §§353-356.
[346] Hegel, Enzyklopädie, §§356-366.
[347] Hegel, Enzyklopädie, §§367-376.
[348] Hegel, Enzyklopädie, §350.
[349] Hegel, Enzyklopädie, §350, add.

All the parts of the animal – taken together – constitute its form, and in separation from the whole they lose their existence. Each part feeds the whole, which in its turn feeds the parts. This has the same constitution as the process of the idea in Hegel's logic. Each part is necessary for the whole idea, just as each part of the animal is necessary for the whole animal. The view of the soul here, like the view of the idea – which is in fundamental agreement with Aristotle's view – was explored in chapter two.[350] It is a unity. And Hegel's explication of it emphasizes the unity with diversity. The last statement of the quote is equally true when turned around: insofar as the body is a unity of its parts it represents the process of idealization. The animal body is essentially like the idea. Soul is not placed somewhere in the body, but it is the unifying force of the body, just as the idea is in everything, but is not itself fixed spatially or fully identified with any of its moments.

Some special characteristics of the animal - differentiating it from the plant - are its freedom of movement, its vocal activity. Some more developed animals can produce heat themselves. The animal has "interrupted intussusception"; and "above all it has feeling." Another basic characteristics is that it has both vegetable and animal soul. I shall explain this latter, but the main gist is that all higher organisms have the capacities of the lower ones as well. So a plant has only vegetative soul, the animal vegetative and animal soul, the human, vegetative, animal and human soul.[351]

The "higher" animal organisms perform the functions of "lower" vegetable ones as well as other functions. And they perform their unique, individual functions only when awake: "Im Schlafe versenkt das Tier sich in die Identität mit der allgemeinen Natur, im Wachsein verhält es sich zu individuellem Organischen, unterbricht aber auch dies Verhältnis; und das Leben des Tiers ist das abwechselnde Wogen zwischen diesen beiden Bestimmungen"[352] This was a general view in the early

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[350] Aristotle's, De Anima, 414a-414b.

[351] Hegel, Enzyklopädie, §351.

[352] Hegel, Enzyklopädie, §351. "When it is asleep, the animal sinks into identity with universal nature; when it is awake, it enters into a relationship with individual organic being, although it also interrupts this relationship. The life of the animal is the successive fluctuation between these two determinations."

nineteenth century, popularized by Treviranus, but that had already been expressed by Aristotle in a fundamental form.[353] In general the functions of nutrition and respiration were classed as vegetative. They are processes that are shared by all living things. Animals too have a vegetative process. These are also functions that continue at work in the sleep. In waking, however, the higher functions also awake. There the uniquely animal functions return to use. The animal then shows is then roused from its place, and freely moves. It expresses its vocal abilities, etc.[354]

The animal, like the plant, also goes through a developmental process in which it "turns itself into what it is".[355] It too is a germ, with potentials for becoming a certain sort of being. We can today think of it as having a DNA code which will determine the direction of its development. But that too is only developed (through assimilation) in relating to "its other", the nature external to it. Hegel views the animal as reaching the highpoint of its development in relating to other individuals of the same species, "relating itself to itself in the other" in the generic process. Hegel, it must be remembered, thinks of the true animal self - similarly to the way he thinks of the true human self as "mind" - as that universal aspect in the individual, i.e., its species powers. When the individual reaches beyond itself to another individual of the same species, it thus only reaches beyond those individual aspects of itself. The universal part of it is found both in itself and in others of its genus.[356] The fusion, though, is one of that which is "true" in the individuals.

As Hegel hardly tires of stressing, the entire process of the development of the animal organism demonstrates that each part serves dually as a means and end: "...was als aufgehoben zum Mittel heruntergesetzt wird, ist selbst der Zweck, das Produkt. – Als das den Begriff Entwickelnde ist der

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[353] See Aristotle, De Anima; G.R. Treviranus, Biologie oder Philosophie der lebendigen Natur, Göttingen: 1802-22.

[354] It is suggestive to read Hegel's comment about waking the soul from its slumber in the logic in reference to this biological theory. In thinking, we apply our unique human abilities, and transcend the mere animal and vegetative experience we have when sleeping.

[355] Hegel, Enzyklopädie, §352.

[356] Hegel, Enzyklopädie, §352.

tierische Organismus die Idee, welche nur die Unterschiede des Begriffs offenbart, und so enthält jedes Moment des Begriffs die anderen, ist selbst System und Ganzes. Diese Totalitäten bringen, als bestimmte, in ihrem Übergehen das Ganze, das jedes System an sich ist, als eines, als Subjekt hervor."[357]

As already seen in analyzing the Science of the Logic, this basically reinforces Kant's definition of the organism as such a whole in which the parts are at one and the same time means and ends. If the means are not used, the whole is not sustained; and if the whole does not serve its parts, the parts are not sustained. They exist in a relationship of mutual dependence.

Though all higher animals share these processes, they are most clearly able to be seen in the human organism, "the perfect animal". Michelet also notes that humans serve for Hegel as the "universal type",[358] basically as the model for what Goethe called the "Urtier". Looking at the different formations and functions in humans one can then better approach the underdeveloped organisms, for, according to the 19th-century morphologists, they should be built in accordance with the same general pattern.[359]

Hegel offers a detailed presentation of the themes just outlined: he discusses shape, assimilation and the genus process.[360] Shape is described as "the animal subject, as a whole which is related only to

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[357] Hegel, Enzyklopädie, §352, add. "...that which is superseded is reduced to means, is itself an end and product. As that which develops the Notion, the animal organism is the Idea which merely manifests the Notion's difference. It is in this way that each moment of the Notion contains the others, and is itself a system and a whole. Each system is implicitly the whole, and the unity and subjectivity of the whole is brought forth in the transition of these determinate totalities."

[358] Hegel, Enzyklopädie, trans. Petry. §252, add. p. 108.

[359] Hegel also argues, with Cuvier, that the Ahigher@ the organism, the more it is freed from its instincts. See, Enzyklopädie, '365, add.; also Hösle, APflanze und Tiere,@ 407.

[360] This more detailed discussion begins in Enzyklopädie, §353 and continues to §376. Most of the remaining chapter shall explicate and comment upon what he says there.

itself."[361] It is essentially the individual organism, with its natural species powers and three vital systems, or three fundamental elements: 1) sensibility; 2) irritability; and 3) reproduction.

4.61 SHAPE/STRUCTURE

Through all of these systems the organism relates to the external world. Through sensibility "if it is touched by something else, it immediately transforms it into itself".[362] Irritability is sensation, but "in the form of a relationship". Finally, through reproduction the organism makes itself external to itself. It passes on that which is universal in it to another of the species. In the lower animals these moments are not distinct, but in the higher ones they are. And it is all but simple to grasp the organism as the combination of these processes: indeed, nothing is nature is so difficult to grasp.[363]

These three elements are expressed in the three main systems of an animal organism: 1) the nervous system parallels sensibility; 2) the system of blood parallels irritability; and 3) the digestive system parallels reproduction. These in turn are differentiated into subsystems, which for their part also reflect the determinations of the idea.[364]

The system of sensibility is comprised of the following: 1) the osseous system, which encloses the entrails in a self-related whole; 2) the cerebral system (connected with the nerves, which relate to inner and outer sensations) and 3) the ganglia, whose sympathetic nerves pertain to reproduction. In short, these systems are said to facilitate our ability to feel impulses from the external world.[365]

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[361] Hegel, Enzyklopädie, §353.
[362] Hegel, Enzyklopädie, §353, add.
[363] Hegel, Enzyklopädie, §353, add.
[364] Hegel, Enzyklopädie, §354.
[365] Hegel, Enzyklopädie, §354.

Hegel describes irritability as "stimulation by another, and the reaction of self-preservation in the face of this...".[366] This system of irritability is the system of blood, connected to muscle, through which the animal physically responds to external stimuli. Pulsation moves the blood through the individual animals system. The heart pumps the blood through the system, which allows for the reproduction of the other members of the animal. Finally the system of glands, together with the skin and cellular tissue, constitute the digestion system, which then mediates in reproduction.[367]

Leaning on Treviranus, Hegel asserts that "all animal bodies may be analyzed into three different constituents of which all their organs are composed, i.e. cellular tissue, muscular fibres and nerve pulp".[368] According to Hegel these are the abstract elements of the three systems, unified in the individual animal. Although Hegel often quotes Treviranus, his views on these issues - particularly on sensibility and irritability - are based in Haller, who Treviranus so often uses as his source.[369] According to Petry's account, sensibility at Hegel's time was considered to be the nerves capability to relate the sensation produced by contact with other bodies. All those body parts able to produce sensations were considered "sensible".[370] Irritability, however, was particular property of muscles to respond to stimuli, defined as follows in The Edinburgh Medical and Physical Dictionary: "the contractility of muscular fibres, or a property peculiar to muscles, by which they contract upon the application of certain stimuli, without a consciousness of action."[371] According to Haller's influential work in this field, entitled A dissertation on the sensible and irritable parts of animals, some organs can have both powers. His own list set the tone for Hegel's above-mentioned listings of which

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[366] Hegel, Enzyklopädie, §354. "Die Irritabilität ist ebensosehr Reizbarkeit durch Anderes und Rückwirkung der Selbsterhaltung dagegen als umgekehrt aktives Selbsterhalten und darin sich Anderem Preisgeben."

[367] Hegel, Enzyklopädie, §354.

[368] Hegel, Enzyklopädie, §354. "...so läßt sich der Körper aller Tiere in drei verschiedene Bestandteile zerlegen, woraus alle Organe zusammengesetzt sind: in Zellgewebe, Muskelfasern und Nervenmark..." . S. Treviranus Biologie oder Philosophie der lebenden Natur, Göttingen: 1802-22. Hegel notes Vol. 1, 166.

[369] See Haller, A Dissertation on the Sensible and Irritable Parts of Animals, (trans. M. Tissort, London 1755, ed. O Temkin, Baltimore, 1936.)

[370] Petry, Encyclopedia, p. 302.

[371] Quoted in Petry, Encyclopedia, p. 302. See R. Morris and J. Kendrick edition, vol. 2, Edinburgh, 1807.

powers belonged to which system.[372] Both sensibility and irritability are also seen as involved in reproduction - or as modifications of it.[373]

For Hegel's part, he sees all parts of the organism as possessing blood, and says "blood is the irritable principle uniting them all in an inner unity."[374] So too blood supplies all the parts of the whole with nutrition. It is the lymph, which originates in the blood, that is directly the "animating element" of the organism. It is basic to the substance of life. The contraction of the muscles is thus of course dependent upon the flow of the vital element to it. Without this, the whole system will break down.[375]

Besides possessing these general systems, animals also have a general shape, in which these above-mentioned systems are united. The views of early-nineteenth-century morphology are quite clear. Shape for its part is then divided into three systems: the head, thorax and abdomen. All animals are thought to have this form, though again, in some lower ones the differentiation will be more difficult to locate. The second characteristic of shape is that its development is both inward and outward: the internal organs as well as the limbs develop, to name one easy-to-understand example. Finally, shape is also "particularized into the sexual which is an outward relationship with another individual".[376]

It is worth pointing out a couple of the types of insights that Hegel makes that were common for the morphologists of the time. Looking again for the parallels between life forms Hegel here notes the internal and external developments in the animal organism, just as he does in describing plants. The

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[372] Haller, A Dissertation on the Sensible and Irritable Parts of Animals. See. Petry, Encyclopedia, p. 312 for more details.
[373] Petry, Encyclopedia, 303.
[374] Petry, Encyclopedia, §354, 121.
[375] Hegel, Enzyklopädie, §354.
[376] Hegel, Enzyklopädie, §355.

development of the different parts of the organism mark relationships either to the external or the internal world. The head, thorax and abdomen house the inner functions of an animal. The hands, feet, wings and other limbs enable the organism to interact with the external world. Another point mentioned and discussed in some detail is the symmetry of organisms.[377] These were standard themes of the day, often used to buttress arguments that there was such a "Urpflanze" or "Urtier". Just as plants grow symmetrical leaves or flowers on both sides of a stem, so too animals tend to have even symmetrical numbers of limbs. Just one more piece of evidence for the rational design of nature.

As an individual in the process of formation, the animal basically converts itself into a means. Although the individual organism has a nutritional source external to it, in digestion it takes what is already a part of it, the not-yet-digested food sitting in its stomach, and digests it. Hegel conceives of this as the organism digesting itself, and sees its members as becoming a means for it.[378] (In extreme cases, where one does not eat, the organs themselves will begin to be digested, as a whole is eaten in the stomach for example.) But the need generated by the organism points it beyond itself, and the organism turns to the external world, which it then assimilates. So it is that Hegel views the organism as "the unity of inner and outer".[379] The described processes are internal to the organism, but they push the animal outside itself towards external assimilation.

4.62 ASSIMILATION

The assimilation process is divided into a theoretical process, a practical one and the process of nisus formativus (which is the combination of the other two). According to Hegel, the world outside of the

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[377] Hegel, Enzyklopädie, §355-6. Petry, 127-31.
[378] Hegel, Enzyklopädie, §356.
[379] Hegel, Enzyklopädie, §356, add.

sentient individual is opposed to it. However, in assimilation it enters into a relationship with the world.[380] Hegel expresses this relationship as one in which a contradiction between two opposing things is overcome in the three process named above:

> Indem das Organische aber ebensosehr auf das Äußere gerichtet ist, als es sich innerlich dagegen spannt, so ist damit der Widerspruch gesetzt, daß in diesem Verhältnisse zwei Selbständige gegeneinander auftreten und das Äußerliche zugleich aufgehoben werden muß. Der Organismus muß also das Äußerliche als subjektiv setzen, es sich erst zu eigen machen, mit sich identifizieren, und das ist das Assimilieren."[381]

The concept is familiar enough by now. But one question remains: why does Hegel picture the two as oppositions, or even contradictions? Certainly scientists do not do so in such strict terms. Here is one of the places where Hegel's reading of his view of reason onto nature is particularly clear. What we have are distinctions between two things. But why view them as contradictory? There is of course fighting in nature, and some beings die at the hands of others. But is it correctly described as being in a condition of contradiction? There is no contention that things are assimilated. Emphasizing the pervasiveness of assimilation seems to be a deep insight on Hegel's part about the nature of human reality. But is reading it as overcoming oppositions merely imposing a logic? And nowhere does Hegel discuss other alternative readings of assimilation. So we seem indeed to have another text in which Hegel may be, if not shoving square pegs into circular holes, then at the very least making unwarranted presuppositions about the nature of reality.

5.621 Assimilation - Theoretical Process

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[380] Hegel, Enzyklopädie, §357.

[381] Hegel, Enzyklopädie, §357, add. "Organic being is oriented towards externality to the same extent that it is internally strung in opposition to it, and this consequently gives rise to the contradiction of this relationship, in which two independent being come forth in opposition to each other, while at the same time externality has to be overcome. The organism must therefore posit the subjectivity of externality, appropriate it, unify it with its own self: this constitutes assimilation."

Hegel turns first to the theoretical process, the ideal nature of the external relationship between these opposing things.[382] This process is "sensibility as an outward process", which he explains as follows:

> Daß es Partikularität seiner wird, das unterscheidet das Empfindende vom Nicht-Empfindenden; im Empfindenden ist also ein Verhältnis zu einem Anderen, das unmittelbar als das Meinige gesetzt ist. Das Harte, Warme usw. ist ein Selbständiges, das draußen ist, nur die Form ist verschieden. So hat der Geist nur Bewußtsein als Selbstbewußtsein, d.h. ich bin zugleich für mich, indem ich auf einen äußerlichen Gegenstand bezogen bin. Der theoretische Prozeß ist das Freie, Begierdelose der Empfindung, der das Äußere auch bestehen läßt. Die unterschiedenen Bestimmungen, die wir an der unorganischen Natur gesehen haben, sind auch ein verschiedenes Verhalten des Organischen zu ihr, als Modifikationen des Empfindens, und so heißen sie eben die Sinne.[383]

Sensation is a capacity of the organism based in its "sensible processes" or sense organs, which allow it to feel impulses from the external world. It exists as a power in the individual being, but as a power more or less "at sleep" until the organism actually encounters material things in the world. This rouses the power, which then allows us to sense the thing's qualities, i.e., whether it is wet, cold, warm, dry, hard, soft and so on. What we sense is an external thing, but we internalize it. What we experience is always our sense of it. So the sensation is an experience of ourselves as well. The relationship we have with the external world is one that is mediated by our capacities. In the case at hand, the real characteristics of the world are mediated through our senses; insofar as they are mediated in experience, we always experience ourselves as well. There is no pushing the subject out of the experiencing process. Nevertheless, we do experience objects external to the subject. This

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[382] Hegel, Enzyklopädie, §357a.

[383] Hegel, Enzyklopädie, §357, add 2. "A sentient creature is distinguished from a non-sentient by its becoming a particular moment of itself. In sentient being there is therefore a relation to another which is immediately posited as the ego's. That which is hard and warm, etc. is independent and external, but it is to an equal extent immediately transformed, and given an ideal nature as a determinateness of my feeling; what I contain is the same as that outside me, it is merely its form which is different. Thus spirit only has consciousness as self consciousness; in other words, in being related to an external object, I am at the same time for myself. The theoretical process is the free disinterested process of sensation, which also allows for the subsistence of the external being. The different determinations we have seen in inorganic nature are also modifications of sensation, and as such they constitute a diversified relation between inorganic nature and organic being. This is the precise reason for their being called senses."

joining or mediating of the subjective and the objective is possible through sensation. So it is that sensation constitutes a theoretical relationship to the world.

Sense mediation occurs through one of five senses: 1) feeling, smell, taste, sight, and hearing.[384] In feeling we experience things in a unity, particularly their shape and heat. It is the sense "of that which offers resistance", of "the earthy element". With sight we sense the spatial presence of things, with hearing the temporal one. Hegel tells us "in hearing the object ceases to be a thing".[385] (This is interesting in relation to Hegel's view of objects, because it seems then that what we might call "temporal things" are not objects. What I have in mind here are such things as non-scripted - or recorded - musical pieces, a speech that no one wrote down and so on.)

Hegel argues on the basis of a rather strange deduction that there can only be five senses. The long and the short of the argument is summarized: "As the range of the theoretical relation is determined by the Notion, it is certain that there cannot be any more senses, although some of them can be missing in lower animals."[386] Hegel did his work long before other research into the senses of bats, for example, was carried out. He would have surely taken such new research into account in his theory given his view that philosophy must be in fundamental agreement with our experience of nature.[387] But it would have required a serious re-working of his central ideas here.

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[384] Hegel, Enzyklopädie, '358. Empedocles had outlined the senses; Democritus had also indicated that there were five. See Plato Timeaus, 656, 3ff. and Aristotle, De Anima, II 7-11. None of these authors, however, argue to classify the senses as practical and theoretical, as Hegel does. Hegel argues that the sense of feeling is ambivalent, but that sight and hearing are theoretical, while smell and taste are practical. Practical senses require immediate contact with the objects, theoretical ones allow the experience of objects from a distance.

[385] Hegel, Enzyklopädie, §358, add.

[386] Hegel, Enzyklopädie, §358, add. "Weil also der Kreis des theoretischen Verhaltens durch den Begriff bestimmt ist, so kann es zwar nicht mehr Sinne geben, doch können in niederen Tieren welche fehlen."

[387] See Enzyklopädie '346, for Hegel's view of the connection of philosophy of science outlined earlier in this chapter. In the popular scientific literature today at least two other abilities are vying for the place as the sixth sense. Steven Pinker argues that the Alanguage instinct@ is one. Oliver Sach's argues that the inner sense of our bodies as unified whole is one. This sense makes it possible for us to sit upright, feel the appendages as ours, etc. With certain neurological damage people loose this sense and thus the abilities we take for granted.

Hegel may well have been mislead into seeing convenient parallels between the deduction of the notion and the view of the senses because of the influence of nineteenth-century morphology on his thought. Hegel seeks the parallels between animals and plants as St. Hilary and Goethe had. And he, like Goethe, thinks that the human was the closest example of a "perfect animal". Being the most developed of the animals, it should contain all of the morphological differences that are found in other ones (and probably all abilities as well). What we find in a refined form in humans is to be found in other animals in less differentiated form. So too, like the morphologists of his time, he thinks that no senses can be found in "lower" animals that do not exist in "higher" ones.

Despite being too eager to make convenient Adeductions@, Hegel was to some extent critical of the tendencies to exaggerate similarities: "Schelling," he tells us, "often oversteps the mark in drawing parallels", as do Oken and Troxler.[388] He consequently dismisses Oken's references to "wood fibers" of the plants as their 'nerves" or their "roots" as their "brains" and other such absurdities. However, he obviously did not overcome the tendency of exaggerating differences himself: and the state of the science at his time played a role in misleading him. The flip side of this, however, is that partially shows his deference to science.[389] He was neither anti-empirical nor anti-scientific, and indeed he continually tried to integrate scientific developments into his thought. So the fact that later science called "transcendental morphology" into question would not have destroyed Hegel's perspective. His openness to the advances of sciences would certainly have allowed him to use the advances to further overcome the tendency to read so much of his logic onto the sciences in the way evident here. But that did not happen in Hegel's lifetime.[390]

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[388] For examples from Oken and Troxler see Hegel, Enzyklopädie, §359, add. See Oken, Lehrbuch der Naturphilosophie, Jena: 1908-11. Hegel specifically mentions vol 2, p. 112.

[389] Hösle also notes that many of Hegel>s mistakes were due to his reliance on the science of the day (See, Hegels System, 279).

[390] See Milic Capek for strong attack of Hegel's own overgeneralizations. See "Hegel and the Organic View of Nature", 109-121. After giving Hegel a bashing for particular views, especially regarding Newton, he does finally offer him limited praise for taking part in "the first revolt against the classical Newtonian physics" (118). Unfortunately, in this treatment Capek does not seem to have appreciated that just that was at issue in almost all of Hegel's criticisms of

4.621 ASSIMILATION – PRACTICAL RELATIONSHIP AND NEEDS

The organism's practical relationship with nature begins with the awareness of the self as separate from nature (with what Hegel calls the self's "deremption"). The self attains "awareness of externality as the negation of the subject".[391] Yet there is a positive moment at hand in the organism's drive to meet its needs. "[T]he process begins with the awareness of deficiency, and the drive to overcome it."[392]

Need serves to link the individuals with what is external to them. Because a living being alone has this quality "it alone in nature is the Notion, which is the unity of itself and its specific antithesis".[393] If we fail to really think about the process of life, then we do not move beyond our original sense of the world as comprised of separate things. We perceive merely the limits that separate an individual from the external world. Or perhaps put more clearly, we are left only with the ordinary views that there are subjects and objects. However, if we think about life, especially about the needs through which our separation from the world becomes apparent to us, we then see those needs merely as one moment in a process, which leads us to reach out and incorporate the world into ourselves. This philosophical thought is vital to science itself.[394]

The seeds of this relationship to nature exist in the individual living organism. An organism does not react to external causes such as gravity and laws of motion in a fully passive manner; it reacts to

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Newton. Hegel almost always criticizes Newton for his lack of understanding that he uses metaphysics, not for particular views of physics.

[391] Hegel, Enzyklopädie, §359.

[392] Hegel, Enzyklopädie, §359. "Der reale Prozeß ... beginnt ... mit dem Gefühl des Mangels und dem Trieb, ihn aufzuheben...."

[393] Hegel, Enzyklopädie, §359, remark. "Nur ein Lebendiges fühlt Mangel; denn nur es ist in der Natur der Begriff, der die Einheit seiner selbst und seines bestimmten Entgegengesetzten ist."

[394] Hegel, Enzyklopädie, §359.

external stimuli with its subjective potentialities - with sensibility, irritability and so on. According to Hegel:

> Daß für den Organismus die Bestimmung von Erregtwerden durch äußerliche Potenzen an die Stelle des Einwirkens äußerlicher Ursachen gekommen ist, ist ein wichtiger Schritt in der wahrhaften Vorstellung desselben. Es beginnt darin der Idealismus, daß überhaupt nichts eine positive Beziehung zum Lebendigen haben kann, deren Möglichkeit dieses nicht an und für sich selbst, d.h. die nicht durch den Begriff bestimmt, somit dem Subjekte schlechthin immanent wäre.[395]

Hegel here speaks of the external potencies, once again reminding us of his variation of Aristotle's the theory of the passive "nous". The things are there in their externality, but lying in wait to be "actualized" by a thinking subject. The active power of thought belongs to the subject, with its system of categories. This categorical structure, which is the notion, determines that a subject take up a particular sort of relationship with the external world.[396] The sort of "idealism" that Hegel espouses here would not necessarily be called such by present definitions of the term. What he stresses with the term here is that one cannot separate the subject from the relationship with the object. The individuals relationship with the world is determined by the conditions and preconditions of the subject (and this has a theoretical and practical dimension).

Here, however, he goes on to criticize two sorts of mistakes that can derive from reading subjective determinations onto reality. First, some people doing this see the subjective categories as imposing one pattern on all reality. Choosing one point of view for reality (for example the mechanical or

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[395] Hegel, Enzyklopädie, §359. "An important advance in the true conception of the organism has been made by changing determinations, and replacing the action of external causes by stimulation through external potencies. This is the seed of idealism, which realizes that nothing whatever could have a positive relation to living beings, if living being in and for itself did not constitute the possibility of this relation, that is to say, if the relation were not determined by the Notion, and therefore not simply immanent in the subject."

[396] It follows, of course, that if the subject were different, the relationship would be different as well. But Hegel does not seem to give this much thought.

chemical perspective) they then deny the qualitative difference in things; second, some deny that there is real difference between things and see it as merely imposed by our minds.[397]

According to Hegel, the medical theory of John Brown, spread by Schelling and his proponents, commits the first error, assuming that all difference in the absolute is merely of a quantitative nature, not of a qualitative one.[398] Brown's followers assume that the absolute is the unity of the subjective and objective, but that the moments comprising them are not qualitatively different. In Brown's theory, popularized in The Elements of Medicine, he denied a fundamental difference between animate and inanimate bodies, differentiating them merely on account of an animate body's susceptibility to stimulation. This later led to a sort of chemical reductionism: the later Brunonians, Röschlaub and some followers of Schelling, tended then to try to explain disease merely in chemical terms. But Hegel saw this as missing the mark. The mistake of reading all phenomena with either the mechanical, chemical or organic point of view is precisely that it collapses all differences into differences of quantity. Hegel, however, wants to maintain qualitative differences between things.[399]

Spinoza, in particular, makes the second mistake, arguing that all difference between things is merely imposed by an "external understanding". The differences between things take on something of the quality of illusory distinctions, such as exists in Buddhist theories of "sumsari" - the view that the differences in the world are a mere illusion. In fact, however, Hegel thinks the differences are real and a quality of the things themselves.

> Insofern diese wahrhafte unendliche Negativität nicht erkannt ist, kann man meinen, die absolute Identität des Lebens, wie bei Spinoza die Attribute und Modi in einem äußeren Verstand vorkommen, nicht festhalten zu können, ohne den Unterschied zu einem bloß Äußerlichen der Reflexion zu machen; womit es dem Leben an dem springenden Punkt der

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[397] Hegel, Enzyklopädie, §359.

[398] See John Brown, The Elements of Medicine, 2 vols. London: 1788.

[399] For more details about Hegel's views see Encyclopedia, 328.

> Selbstheit, dem Prinzipe der Selbstbewegung, Diremtion seiner selbst in sich überhaupt fehlt.[400]

Spinoza specifically fails to see that the world has difference in itself. All individual things are viewed as a construction of "external understanding", rather than as determinations of the things themselves. This is a substantial problem of this sort of idealism according to Hegel. In his own "idealism", Hegel wants to maintain that the differences between things are not merely external determinations imposed on them by our minds, but that they exist in the things themselves. However, this world, with all it real difference, lies in wait for mind to act upon it. So we do determine it as we do because of our categories; the thing is, our categories determine the things as they are. The difference which is already there merely comes to fruit in being thought out by reflective subjects. He does not argue, however, like Kant, that the things are the way they are (for us) because we think them that way. Nor is he some sort of constructivist thinking that the differences are imposed sort of willy-nilly, not reflecting reality. Indeed this sort of "idealism" would commonly be interpreted differently today: namely, as realism.

Traditional idealism - what Hegel calls subjective idealism - can easily lead to one of the two dead ends mentioned; Hegel wants to avoid them with the perspective portrayed. Unfortunately Hegel does not offer arguments for the fact that the objective world really is the way we think it to be, that it in itself contains the determinations of reason. In his theory it remains a non-proven presupposition.

Drives and needs are vital to the practical relationship of assimilation: "The drive constitutes purpose".[401] It eventually pushes the individual form beyond itself to assimilate the things in the

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[400] Hegel, Enzyklopädie, §359, remark. "One may think, in so far as one is not aware of this genuinely infinite negativity, that one is unable to hold fast to the absolute identity of life, without converting the moment of difference into a simply external moment of reflection. This is of course the case with Spinoza, whose attributes and modes occur in an external understanding; life must then completely lack the leaping point of selfhood, the principle of autonomous movement, of internal self-diremption."

world that it needs in order to continue its own internal development. Hegel also defines instinct as internal purposiveness in living organisms. “Instinct is purposive activity operating in an unconscious manner”.[402] The organism maintains a practical relationship with nature.[403] This leads to assimilation of various sorts: of air in the process of respiration and through the skin; of water because of thirst; of food because of hunger. Living beings satisfy their needs and drives, but the needs continually recur. So it is that the organism continually comes into a sort of disequilibrium with itself. It finds a lack in itself (in its need) which it fulfills, only that it eventually return again. It is thus not fully “adequate” to its “notion”.[404] Hegel compares this then with mental life: “...the drive is only instinct when it relates itself to an individualized object. In such a relation, the momentarily satisfied need is perpetually recurring. Spirit however, by developing its cognition of universal truths, finds its satisfaction in a much more universal manner.”[405]

In our mental life we are able to attain a greater state of equilibrium.[406] When we learn something, that need becomes satisfied, and our knowledge of the material does not necessarily disappear so that a need arises to learn it again. At most, it would seem that we have a perpetual need or desire to know more, which is never fully satisfied. But this is different from the practical relationship of assimilation.

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[401] Hegel, Enzyklopädie, §360. Drives and needs are discussed in detail in §§360-362.

[402] Hegel, Enzyklopädie, §360. "Der Instinkt ist die auf bewußtlose Weise wirkende Zwecktätigkeit."

[403] Hegel, Enzyklopädie, §361.

[404] Hegel, Enzyklopädie, §362.

[405] Hegel, Enzyklopädie, §362, add. "Der Trieb ist nur dann Instinkt, wenn er sich zu Individualisiertem verhält. Während sich damit aber das momentan befriedigte Bedürfnis immer wieder erzeugt, befriedigt sich der Geist in der Erkenntnis allgemeiner Wahrheiten vielmehr auf allgemeine Weise."

[406] Warnke attempts to render Hegel>s view of the equilibrium of organic systems into the language of systems theory. (See "Aspekte des Zweckbegriffs in Hegels Biologieverständnis", 251; see also WandschneiderAAnfänge des Seelishcen in der Natur in der Deutung der hegelschen Naturphilsophie und in systemtheoretischer Rekonstruktion@.)

In both practical and theoretical forms "[a]ssimilation itself is the enveloping of the externality within the unity of the subject."[407] It starts however from a form which has both mechanical and organic components: assimilating organisms show an "absolute self identity"; they are not a "mere composition".[408]

Through digestion the animal enters the second moment of assimilation in which it transforms that which it has taken up into it.[409] This finally allows it to reproduce itself (not in the species, but in its individual life), transforming what was external to it into its very self. In this process it expels some of the useless elements that it has taken into it (defecating and urinating for example).[410] In this process it unites subject and object. Nevertheless, it is a unity with difference.[411]

Next Hegel moves to the "nisus formativus". Blumenbach had defined it as the principle of reproduction, and he became best known for his vitalist theory of it.[412] Blumenbach's Über den Bildungsbetrieb, which Hegel often sites, was the most important book for revising vitalism in his day.[413] Despite Hegel's reliance on Blumenbach, however, he has a slightly different view of "nisus formativus". For Hegel, this is the generic process, but in which the practical and theoretical relationships of the animal organism are united.[414]

Fundamentally the animals production of itself is self-preservation or reproduction.[415] In it the individual "brings itself forth as a universal".[416] Those general aspects of it, which it possesses by

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[407] Hegel, Enzyklopädie, §363.
[408] Hegel, Enzyklopädie, §363, add.
[409] Hegel, Enzyklopädie, §364.
[410] Hegel, Enzyklopädie, §365.
[411] Hegel, Enzyklopädie, §365, add.
[412] See Petry, Encyclopedia, 349.
[413] See Petry, Encyclopedia, 350. Blumenbach, Über den Bildungsbetrieb, Göttingen, 1731, 3rd ed. 1791.
[414] Hegel, Enzyklopädie, §365, add. For details see Petry.
[415] Hegel, Enzyklopädie, §366.

virtue of its species power are preserved as the individual reproduces. In this process the individual reaches the final level of self fulfillment.

Hegel summarizes the entire growth process: "Initially the animal is restricted to itself; secondly, it brings itself forth at the expense of inorganic nature, by assimilating it. The third relationship, which is the union of the first two, is the generic process, in which the animal relates itself to itself by relating itself to one of its kind. As in the first process, it relates itself to a living being, and as in the second process, it relates itself at the same time to a being which it finds before it."[417]

4.63 THE GENERIC PROCESS

The generic process constitutes "the concrete substance of the subject".[418] The organism is not an isolated individual entity with internal form alone; instead, it is a self with universal characteristics that it shares with others of its class. In this process of generation it joins up with others of its genus that also share in this "universal" aspect; so, according to Hegel, we can view it as "linking up with itself", i.e., with that dimension of it which is universal.[419]

Every individual is immediately united to its genus, but in its "singular subjectivity" it is also separate from it.[420] In exercising its universal powers the "immediate subjectivity" of the organism is "negated". This "negation" involves a figurative death in which the particular features of the organism are annulled. What Hegel has in mind is the following: for self-sustenance and for sustenance of the species the individual is dependent upon species-wide characteristics, not

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[416] Hegel, Enzyklopädie, §366, add.
[417] Hegel, Enzyklopädie, §366, add.
[418] Hegel, Enzyklopädie, §367. Hegel begins to concretize his view of the generic process here.
[419] Hegel, Enzyklopädie, §367.
[420] Hegel, Enzyklopädie, §367, add.

individual ones. The process of digestigion, for example, is not individual, but species wide; so too is circulation, etc. Insofar as the individual survives because of species-wide characteristics, according to Hegel we can speak of the "negation" and "death" of the particular. This is evident both in self-reproduction (where the organism produces itself from what it already is) and in sexual reproduction (where the organism creates a new individual of its species). In these processes the universal aspect of the self shows its predominance over the individual features of a living thing. The generic process has three forms: the sex relationship;[421] genus particularizations which give rise to violent death;[422] the relationship of the individual to the universal aspects of itself.[423]

4.631 THE SEX RELATIONSHIP

The sex relationship begins with a need, arising because the "singular being is not adequate to the immanent genus".[424] The genus or universal characteristic in the individual exists at odds with its individual characteristics. The fact that the individual cannot adequately reflect the universal characteristic of the genus causes a strain in the individual, which manifests itself in "an urge to attain its sentience in the other of its genus", in short, in the urge to generate. It cannot do this alone, but – at least in developed animals – needs another of its species[425]

The two sexes are separate in developed animals. Each of them is viewed as lacking the wholeness of the species characteristic. But the animal reproduces itself as a totality. In the act of sex the two sexes are joined as one: "Their union is the disappearance of the sexes..."[426] In sex two animals find

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[421] Discussed from §§368-69.
[422] Discussed in §370.
[423] Discussed in §§371-76.
[424] Hegel, Enzyklopädie, §369. "...das Individuum als Einzelnes der immanenten Gattung nicht angemessen...ist."
[425] Hegel, Enzyklopädie, §369.
[426] Hegel, Enzyklopädie, §369, add. "Ihre Vereinigung ist das Verschwinden der Geschlechter..."

that “the nature of each permeates both”; additionally, “both find themselves within the sphere of this universality.”[427]

“The product is the negative identity of differentiated singularities, and as a resultant genus, an asexual life”.[428] The differences between the sexes is overcome in the union of the two individuals. And they experience either a metaphorical or, in the case of some lower animals such as butterflies, an immediate and literal death. In human sex though “in the feeling of love...the selfishness of the single being is negated”.[429] This is the metaphorical death of the individual.[430]

4.7 CLASSIFICATION THEORY

Given the “general” character of a species, Hegel thinks that a natural cataloguing of animal (and plant) sorts is possible - and indeed a classification of natural types because the notion lies at the root of their forms.[431] Thus he is pleased about the developments in zoology and morphology at his time, which he views as paving the way for the field to overcome artificial classification systems and allow classification according to forms that “conform to the notion”.[432]

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[427] Hegel, Enzyklopädie, §369, add. "Die Natur eines jeden geht durch beide hindurch, und beide befinden sich innerhalb der Sphäre dieser Allgemeinheit."

[428] Hegel, Enzyklopädie, §370. "Das Produkt ist die negative Identität der differenten Einzelheiten, als gewordene Gattung ein geschlechtsloses Leben."

[429] Hegel, Enzyklopädie, §370, add. "Die Liebe dagegen ist die Empfindung, worin die Selbstsucht der Einzelnen und ihr abgesondertes Bestehen negiert wird...."

[430] It may be deceptive to speak of this as a metaphorical death. While most of us would consider it a metaphorical one, we do see death in the realm of the logic as a category as well, so Hegel would probably not call it metaphorical.

[431] Hegel, Enzyklopädie, §368.

[432] Hegel, Enzyklopädie, §368, remark. In particular Cuvier made advances in this field; and he grasped more than the morphological features of the physical structure, also being able interrelate function of organs. See Hegel's remarks in §368.

In general he thinks it is possible to work effectively with the ideas of transcendental morphology: "There is only one animal type, and all animal difference is merely a modification of it"[433] So he looks for general parallels of structure and function. But modifications within a species will prevent us from bringing the forms of nature into an absolute system.[434] So, he shows no blind faith in classification attempts. They will allow us to catalogue a part of nature, but not to do so with absolute effectiveness.

In essential agreement with Treviranus, Hegel argues that environment is responsible for differences among organisms of the same genus: "An important aspect of this approach is the recognition of the way in which nature shapes and adapts this organism to the particular element in which it places it, to climate, to a range of nutrition, and in general, to the environment which it finds about it."[435] While these environmental factors influence the development of individuals to such an extent so as to prevent us from fully adequately cataloguing nature, they do not provide for an entire change of species. All that is changed because of environmental factors are non-essential attributes, not essential ones. But the environmental influence can blur the essential characteristics so much as to make it impossible to correctly order them.

Obviously one sees the potentials for an evolutionary theory here. In fact, Hegel even shows an awareness of adaptation for greater fitness, indicating that some of the changes are advantageous to an organism under particular environmental conditions. Yet, he stops short of evolutionary theory and argues that most of the effects of the environment are detrimental to the organism. This latter is what Hegel tends to emphasize: a seed planted in infertile ground, for example, will not grow, nor

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[433] Hegel, Enzyklopädie, §368, add. "Es gibt nur einen Typus des Tiers (§352 Zus. S. 436), und alles Verschiedene ist nur Modifikation desselben." Or see §368: "Die unterschiedenen Gebilde und Ordnungen der Tiere haben den allgemeinen, durch den Begriff bestimmten Typus des Tiers zum Grunde liege..."

[434] Hegel, Enzyklopädie, ' 368, add.

[435] Hegel, Enzyklopädie, §368. "Eine Hauptseite dieser Betrachtung ist die Erkenntnis, wie die Natur diesen Organismus an das besondere Element, in das sie ihn wirft, an Klima, Kreis der Ernährung, überhaupt an die Welt, in

will one shielded from the sun. In fact "the feebleness (Ohnmacht) of nature" causes it to give rise to "monstrosities". This is normally due to the negative influence of environmental factors. They can also cause a given organism to fall into sickness, depriving it of the goods it needs to maintain its equilibrium. In general, organisms fluctuate between illness and health; and much of the illness is caused and perpetuated by the inadequacy of the environment.[436] (The ultimate cause of death, however, is normally the conflict between the universal and particular aspects of the organism.)

Despite the modifying effects of the environment, each genus remains unaltered. But more important for his general classification scheme is that there are also similarities among all animal and plant types; as such, these similarities in form can be compared in the various animals. This reflects his main principle of the classification of animals in general; namely, that each stage reflects the structures of a single animal type. Indeed, Hegel is much more interested in classifying along these lines than along others. His main concern is not to show how a particular flower species differs from another, but to point to general similarities of function and form among all living things. In this he follows the morphological ideal of Goethe already outlined; but he emphasizes functions. In lower animals, sensibility, irritability and reproduction are not clearly differentiated; so in order to understand these processes "one has to identify the developed organism, for it is this that constitutes the measure or prototype of its less developed prototype."[437] This is the single animal type apparent at each stage: this prototype is a human being, which is the most perfect of the animals.[438]

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der er aufgeht (die auch eine einzelne Pflanzen- oder andere Tiergattung sein kann), anbildet und anschmiegt." See also Treviranus, Biologie oder Philosophie der lebenden Natur, Göttingen, 1802-22.

[436] Hegel, Enzyklopädie, §368, remark.

[437] Hegel, Enzyklopädie, §368, add. "...muß man den entwickelten Organismus erkennen, da er der Maßstab, oder das Urtier für die weniger entwickelten ist..."

[438] Hegel, Enzyklopädie, §368, add. See, Petry, 181.

In his philosophical morphology he shows influences of both Cuvier and Lamarck.[439] He shows basic support for Cuvier's work in which he came to see the purposiveness of the relation of pairs of living beings. He quotes with approval the view of Cuvier that: "Jedes organisierte Wesen bildet ein Ganzes, ein einiges und geschlossenes System, dessen sämtliche Teile einander entsprechen und durch Wechselwirkung aufeinander zu derselben Endtätigkeit beitragen. Keiner dieser Teile kann sich verändern, ohne daß es auch die anderen tun, und folglich wird jeder derselben, für sich genommen, alle anderen andeuten und ergeben."[440] Cuvier determined numerous parallels, including that clawed animals are also meat eaters; he also noted, for example, that those with hoofs are herbivorous; and ruminant, which chew their own cud require complex digestive tracts thus they often have more than one stomach. These results of comparative morphology were quite striking.[441]

Other parts of his classification scheme reflect Lamarck's work more than Cuvier's:[442] he praises Lamarck for returning to Aristotle's differentiation between vertebrates and invertebrates, and

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[439] See Hegel, Enzyklopädie, §368 and addition. For comments on Lamarck esp. p. 509ff. He often cites Cuvier, Recherches sur les ossements fossiles des quadrupèdes, Paris, 1812, and Lamarck, Eléments de zoologie, and Philosophie zoologique, Paris, 1809.

[440] Hegel, Enzyklopädie, §368, add. See Petry, 182. From Cuvier, Recherches sur les ossements fossiles des quadrupèdes, 58ff. "Every organized being forms a whole, a unified and closed system, all the parts of which mutually correspond, and by means of reciprocal action, contribute to a common purposive activity. None of these parts can alter without the others altering also; as the result of this, each of them, taken separately, implies and yields all the others." Richard Buchdahl notes that Cuvier thought that a drastic change in the organism would destroy the harmony of the organs needed for the continued existence of the organism. This was part of his case against evolution, which would bring about changes in parts that would throw the whole out of equilibrium.

[441] In a famous case Cuvier correctly reconstructed parts of the skeleton of a predator after having merely identified one bone from it. His projections about the anatomy were verified when the rest of the skeleton was found (See Breidbach, Das Organische in Hegels Denken, 86). Mayr notes that prior to Cuvier taxonomists tended to think of each characteristic of the organism as indifferent to the others (See, Science and Biological Growth, 183).

[442] See §368 and §368, add. Cuvier's system of classification, in contrast to Lamarck's, was based on a system of stable essences, it being thought that any changes would endanger the balance between the various parts. While Hegel agreed with Cuvier here – at least regarding the general stability of the species he did argue that non-essential characteristics were environmentally conditioned. He also took up positions of Lamarck's regarding classification. For Cuvier>s part, he mostly ignored Lamarck's evolutionary theory, but occasionally he poked fun at it saying, for example, that it contained Avast edifices [constructed] upon imaginary bases" (See Burkhardt, The Spirit of System, 196).

generally accepted his divisions of the animal kingdom into four vertebrate sorts and 10 invertebrates.[443]

However, despite the usefulness of these schemes, Hegel still does not think that all animals can be absolutely clearly classified. He has hints already – certainly on the basis of fossil finds – of the gaps in classification that led Lamarck and later Darwin to propose a theory of changing species. However, he explains these gaps differently: "There are of course animals which cannot be clearly classified; the reason for this lies in nature's not having the power to remain true to the Notion, and to coalesce neatly with the determinations of thought."[444]

4.8 SICKNESS AND DEATH

As already outlined, the organism is in a relationship with external nature in which it turns outward from itself in assimilation, but then always returns to itself. However, at some point it might develop an extreme disequilibrium within itself in which its systems or organs come into conflict with the "inorganic potency of the organism".[445] In this state the organs become isolated from the function

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[443] Hegel, Enzyklopädie, §368, add. 509ff. Hegel cites Aristotle, Classification Historia animalium I, 4; III, 7.

[444] Hegel, Enzyklopädie, §368, add. See Petry, 187. cp. §368 "Die Unmittelbarkeit der Idee des Lebens ist es, daß der Begriff nicht als solcher im Leben existiert, sein Dasein sich daher den vielfachen Bedingungen und Umständen der äußeren Natur unterwirft und in den ärmlichsten Formen erscheinen kann; die Fruchtbarkeit der Erde läßt Leben allenthalben und auf alle Weisen ausschlagen. Die Tierwelt kann fast noch weniger als die anderen Sphären der Natur ein in sich unabhängiges vernünftiges System von Organisation darstellen, und den Formen, die durch den Begriff bestimmt wären, festhalten und sie gegen die Unvollkommenheit und Vermischung der Bedingungen vor Vermengung, Verkümmerung und Übergängen bewahren." The mentioned considerations regarding problems of classification theory were certainly not based solely on the problems of explaining what sorts of animals fossil finds represented. Hegel does not think that it will be possible to adequately schematize nature at the level of general groupings such as orders. In relation to the grouping of fish he sees this problem quite clearly. They cannot be merely identified with swimming organisms, because some organisms, such as certain reptiles, can also swim, although they also live outside of water. Given this problem, we can change the category, but we shall run into other problems in doing so. Some water-living organisms have lungs, some gills, some are viviparous, some not. "The forms of nature cannot be brought into an absolute system therefore, and it is because of this that the animal species are exposed to contingency" (' 370, add. Petry. 181).

[445] In Hegel, Enzyklopädie, §§371-73 Hegel turns to the issue of sickness and death in the organism. This quote is from §371.

of the whole; they are set "in opposition to the activity of the whole".[446] This is the state of disease.[447]

In a state of health, in contrast, "there is a commensurate relationship between organic and inorganic being, as the result of which inorganic being does not offer any insuperable resistance to the organism."[448] Disease reverses this: "its Notion consists of a disproportion between the organism's being its self."[449] There are various forms of disease including: 1) noxiousness, external in origin, but also able to break out on its own; and 2) various diseases brought about by contact with noxious influences - for example, acute disease, chronic disease and diseases of the soul. Fever is an example of a disease exhibiting itself in sensibility, irritability and reproduction. It weakens the entire system. At the same time, however, this illness constitutes the organism's "incipient inclination towards recovery";[450] it is a step toward the organism's recovery.

Illness, according to Hegel, is particularly due to an over-excitement or under-excitement of one sort or another. By means of a healing agent the organism "is excited into annulling the particular excitement in which the formal activity of the whole is fixed."[451] Through this is restores the "fluidity" of the organ or system within the whole. If the disease is not overcome, then the organism dies.[452] It is inevitable that this happen sometime: "it lies in the nature of the organism itself that externality should be the cause of death."[453] There are, of course different sources of death. Hegel

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[446] Hegel, Enzyklopädie, §371. "...gegen die Tätigkeit des Ganzen beharrt..."

[447] See D. von Engelhardt for more detailed analysis of forms of illness: AHegels Organismus Verständnis und Krankheits Begriff@.

[448] Hegel, Enzyklopädie, §371, add. "sie besteht im gleichmäßigen Verhältnisse des Organischen zum Unorganischen, so daß nicht ein Unorganisches für den Organismus ist, welches er nicht überwinden kann."

[449] Hegel, Enzyklopädie, §371, add. "ihr Begriff ist eine Disproportion seines Seins und seines Selbsts."

[450] Hegel, Enzyklopädie, §372. "...der Versuch und Beginn der Heilung..."

[451] Hegel, Enzyklopädie, §373. "Das Heilmittel erregt den Organismus dazu, die besondere Erregung, in der die formelle Tätigkeit es Ganzen fixiert ist, aufzuheben...."

[452] Hegel, Enzyklopädie, §374.

[453] Hegel, Enzyklopädie, §374, add. "Die Notwendigkeit des Todes besteht nicht in einzelnen Ursachen, wie überhaupt nichts im Organischen; denn daß das Äußere Ursache sei, liegt selbst im Organismus."

earlier discussed violent death. There is also death because of old age. Due to a lack of strength, the irritability of the heart weakens and an organism can die a death "of its own accord".[454]

"The original disease of the animal, and the inborn germ of death, is its being inadequate to universality."[455] Or as he continues: "The organism can recover from disease, but it is because it is diseased from its very nature that death is a necessity, i.e. that this dissolution occurs, in which the series of processes becomes an empty process not turning back into itself."[456] It becomes incapable of self-regulation. The old lose interest in new things, settle into habits. Spirit and body separate. The notion here passes over into its truth, into spirit, in which it has its "concrete universality".[457] Hegel says that because a being's existence "is still inadequate to the universality of the idea, the idea has to break out of this sphere, and draw breath by shattering this inadequate existence."[458] So it is that the general or genus must pass over into consciousness.

The "universal" of an organism can overcome death in two ways. On the one hand, the universal in the living being is passed on to other individuals of its species; in this way, the genus (that universality) lives on in nature. On the other hand, that universal can be grasped by a consciousness. It can be known.

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[454] Hegel, Enzyklopädie, §§374-75.

[455] Hegel, Enzyklopädie, §375. "Seine Unangemessenheit zur Allgemeinheit ist seine ursprüngliche Krankheit und [der] angeborene Keim des Todes."

[456] Hegel, Enzyklopädie, §375, add. "...weil er von Haus aus krank ist, so liegt darin die Notwendigkeit des Todes, d. h. dieser Auflösung, daß die Reihe der Prozesse zum leeren, nicht in sich zurückkehrenden Prozesse wird."

[457] Hegel, Enzyklopädie, §376.

[458] Hegel, Enzyklopädie, §376, add. "Da diese Existenz nun der Allgemeinheit der Idee immer noch unangemessen ist, so muß die Idee diesen Kreis durchbrechen und sich durch Zerbrechen dieser Unangemessenheit Luft machen."

4.9 PHILOSOPHY OF NATURE AND PHILOSOPHY OF MIND

In the last pages of the Philosophy of Nature Hegel attempts to show the necessity of progressing beyond the view of nature alone, to show the need for taking the philosophy of mind into account when reflecting about nature. The transition here has similarities to those in the logic. In a nutshell, Hegel maintains that the universal in nature can be preserved in thought, and indeed is only reflected in clarity in thought, so it is necessary to transcend from philosophical reflections about natural beings to those about consciousness, about mind. So it is that spirit or mind proceeds in some ways from nature.

Yet this is a reciprocal, circular relationship. Nature both proceeds from spirit and gives rise to it. On the one hand, nature is immediate, on the other, a merely posited immediate, i.e., something we think.[459] A human is one of these immediate beings that it also reflects upon. In reflecting upon immediate beings it finally comes to see itself as the highest of them. It passes from philosophy of nature to philosophy of mind, seeing that the human biological, conscious organisms are those with mind, which "fashions nature from within itself."[460]

Conscious life is human life, human life conscious life: "Der Geist, der sich erfaßt hat, will sich auch in der Natur erkennen, den Verlust seiner wieder aufheben. Diese Versöhnung des Geistes mit der Natur und der Wirklichkeit ist allein seine wahrhafte Befreiung, worin er seine besondere Denk- und Anschauungsweise abtut. Diese Befreiung von der Natur und ihrer Notwendigkeit ist der Begriff der

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[459] White also emphasizes a point similar to this. See Absolute Knowledge, 25. On the one hand, the categories make experience of the subject possible, and this is deduced in the logic. On the other hand, the subject is existent from the beginning of the process, carrying out the deduction of the categories.

[460] Hegel, Enzyklopädie, §375.

Naturphilosophie. Die Gestalten der Natur sind nur Gestalten des Begriffs, jedoch im Elemente der Äußerlichkeit..."[461] So, reflection on nature presupposes reflections on mind.

Hegel makes this clear in the last sentence of the additions to the Encyclopedia: "Der Zweck dieser Vorlesungen ist, ein Bild der Natur zu geben ... in dieser Äußerlichkeit nur den Spielgel unserer selbst zu finden, in der Natur einen freien Reflex des Geistes zu sehen, - Gott zu erkennen, nicht in der Betrachtung des Geistes, sondern in diesem seinem unmittelbaren Dasein."[462]

4.10 GENERAL CONSIDERATIONS ABOUT THE NATURAL PHILOSOPHY

This chapter has shown Hegel's great interest and respect for the life sciences of his time and presented his view about how philosophy could anchor science. In his natural philosophy, he demonstrates a broad knowledge of the natural scientists of his day. We can see from this how his views of the organism (and system) derive from the 19th-century European developments in the life sciences. What Hegel attempts to do in his natural philosophy is show elements of thought necessary for thinking about natural organisms that inform our thought about these objects. Many of his thoughts here are quite engaging.

However, one obvious problem in Hegel's treatment of animals or plants, or in fact any of the areas of his natural philosophy is that he generalizes characteristics often found in merely some of the class under examination. This is clear in his treatment of animals, for example: various insects are also

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[461] Hegel, Enzyklopädie, §375. "Spirit, which has apprehended itself, also wants to recognize itself in nature, to make good again the loss of itself. It is only by this reconciliation with the nature and actuality that spirit is truly liberated, and sheds the particularity of its modes of thought and intuition. This liberation from nature and its necessity constitutes the Notion of the philosophy of nature. The shapes of nature are merely shapes of the Notion, although in the element of externality."

included in the family, yet they do not show a good number of the qualities he attributes to "animal organism". Although ants, for example, have freedom of movement and show a unity in the diversity of their parts, they are neither warm blooded, nor do they make a lot of noise - as they fully lack a vocal capacity. The degree of their sensation might also be suspect given, for example, their aptitude for running into flames of fire which then scold them to death. These and similar inflations of similarities make much of Hegel's writing in this general area rather inapplicable to real science. Some basic similarities are indeed interesting, but by pushing his categorization too far, he renders himself a disservice, forcing square pegs into round holes. His search for comparisons among all plants and animals leads him to inflate parallels among living beings, as other early-nineteenth-century morphologists did. Oddly enough, by accepting the authority of morphology Hegel in some ways rendered his theory a disservice.

And what is true here is true for Hegel's search for parallels in general, between the logic and the natural philosophy, between these and the philosophy of mind, between all this and the state or the history of art or what have you. While the comparisons may be instructive and may even inform us to some extent about the nature of our minds or the world, it is by now a truism that Hegel pushes these similarities too far. The logic, nature and the mind - as well as sciences, the state, art history - according to Hegel always reflect a dialectical development based in the nature of mind. But again, while parallels may be found, they can also be constructed. Hegel unfortunately seems too often to construct them.

In certain ways he reflected tendencies of a lot of people in his age. Geodfrey, Oken, Goethe and Kant all made similar mistakes.[463] I have shown, I think, that in general this trend did not always lead

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[462] Hegel, Enzyklopädie, §376 add. "The aim of these lectures is to convey an image of nature...to find in the externality only the mirror of ourselves, to see in nature a free reflection of spirit; to understand God, not in the contemplation of spirit, but in His immediate existence."

[463] One fact influencing the whole discussion was the lack of clarity about the goal of organics at the time. Whereas some were developing explanatory schemes for nature, in general people still shared Boerhaaves' definition of botanic

to absurdity and that Hegel often had good reasons for defining his terms as he did. That he did not always have good reasons for doing so partially reflects the enthusiasm for generalization of his age and the German context. The occasional abuse of generalizations, however, should not lead us to the other extreme of not making them at all. Much of what Hegel says is very sensible. It is at least, not absurd to look for general theory of categories and to try to see how these influence our thinking in different areas of life. That it can be abused does not mean that it should not be done, only that it should be done carefully.

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from the seventeenth century: "Die Botanik ist der Teil der Wissenschaften, mit dessen Hilfe die Pflanzen am glücklichsten und mit geringsten Mühe erkannt und in Gedächtnis behalten werden@ (Quoted in Breidbach, Das Organische in Hegels Denken, 18). Hegel was at this time, clearly appreciative of the attempts of philosophers of nature to redefine the science.

CONCLUSION

One of the things I have done in this work is try to debunk the view that Hegel is a pantheist or panentheist. The interpretation offered here depicts him largely as extending Kant's views while trying to clarify them and iron out some Kantian difficulties, especially being concerned to better secure the life sciences. In viewing the world and various systems as organic he does not propose that they are somehow mystically alive, but merely that they display the same organizational structure we first associate with living organic things. They are wholes consisting of parts that are at one and the same time a means and an end. They assimilate things external to them, and in this process they sustain or reproduce themselves.

Hegel indeed refers to many "non-living" objects as organic. And while he views all objects taken together as an organism he does not for that view each of them individually as organisms. Instead he specifies three ways to structure objects and three object sorts: there are mechanical, chemical and organic objects. Because the three perspectives and three object sorts are integrated into the logic, the respective sciences can be securely anchored: they can be shown to have an apriori, philosophical moment. That object including all others as its members – paralleling the Leibnizean "monad of monads" – is organic, but not all the objects comprising it are. They are organic only as a whole, the whole being more than the sum of its parts.

Hegel concretizes his view of an organism against the backdrop of Kant's philosophy. Kant had viewed animals and plants as well as the architectonicof reason as organic. Hegel adds other systems to this list and more fully elaborates the "organism" concept. An organism has the "concept" for its substance. Such a conceptual whole also has a structure indicating its boundaries to the environment. However, it has boundaries which it must cross because it is dependent for its own survival upon assimilating elements of its environment into itself. It thus assimilates, showing that the boundaries only capture a part of the truth. In assimilating things external to it, it unifies itself with those things: the distinctions between system and environment break down. In this process it reproduces itself.

The terms used in this logical description of systems are the same ones characterizing much of the biology of Hegel's time. Yet in some ways his theory also seems quite contemporary. Systems theoreticians today also describe various systems as wholes with the same sorts of processes. If we think Hegel was right this should not surprise us. For according to Hegel this way of viewing certain wholes belongs to our category structure and accurately describes some sorts of objects. There simply are some things in the world that are goal-directed and that entail processes of assimilation and reproduction. Viewing them as such is not merely "natural", it is, in fact, inevitable if we are to view them correctly. So (if we work within Hegel's own framework) it might not be terribly important whether Hegel exerted influence upon later developments in this area of thought, except to satisfy an historical curiosity.

Regardless of possible influences via Hegel or 19th-century life sciences, the detailed examination of Hegel's organism view offered here bears out these similarities to an astonishing degree. I shall examine how Hegel's ideas parallel the very general ideas of early systems theoreticians, then highlight some of the differences between Hegel's perspective and that of modern systems thinkers. I shall then round off the chapter with a couple general comments of Hegel's views.

In the most general of formulations of modern systems theoreticians, a system is said to involve "a unity or wholeness of some sort that hold its parts together."[464] But there are a wide array of general views within systems theory itself. As Yudin, et al, sum up: the term system "is taken by von Bertalanffy to mean 'a set of elements standing in interrelations', by W. Ross Ashby to be 'any set of variable available on the real machine', by A. Hall and R. Fagen as 'a set of objects together with relationships between the objects and between their attributes', by S. Sengupta and R. Ackoff as, 'a set of activities (functions) that are connected both in time and space by a set of decision-making

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[464] A. Bahm, "System's Theory: Hocus Pocus or Holistic Science?" in General Systems, Vol. SIV, 1969, 175; quoted in Yudin, Systems Theory: Philosophical and Methodological Problems, 269.

and behavior-evaluation (that is control) practice."[465] This listing shows just how generally and diversely systems ideas are understood; and with such broad views about what systems are it might not surprise us to see that Hegel said some very similar things

But this might also cause concern: one might even fear that what Hegel and those who antecede him say about systems is so trivial that it is relatively unimportant if Hegel developed such views before systems theoreticians did. Just how far does systems theory take us on our pursuit of knowledge anyway? What are systems theoreticians to do after broadly defining these features that systems share? Such considerations concern "the fundamental uncertainty" of the tasks and objectives of the theory.[466]

Hegel might not suffer at the hands of such a criticism as much as classical systems theoreticians because his systems views are developed merely as one part of the much more general theory in which he lays bear the "logic" of human experience. This logic has its limited domain. Further, in Hegel the systems view fundamentally serves to structure the disciplines and set the tone for a certain research style, rather than assuming the status of a science itself. Insofar, he anticipates Rapport, who – likewise- would not see this "fundamental uncertainty" as particularly problematic: "General systems theory subsumes an outlook or a methodology rather than a theory in the sense ascribed to this term in science. The salient feature of this outlook is, as its name implies, an emphasis on those aspects of objects or events which derive from the general properties of systems rather than from specific content."[467]

Hegel had clearly already embraced such a systems "outlook", attempting to be sensitive to how all aspects of a theory fit together into a whole, as well as what materials it assimilated, what goals the

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[465] Yudin, Systems Theory: Philosophical and Methodological Problems, 126.
[466] Yudin, Systems Theory: Philosophical and Methodological Problems, 195.

system had, how it reproduced itself and the like. He did not engage in a thoroughgoing investigation of all systems in this way, but he did look at various systems quite generally with such an "outlook", and he clearly had the theoretical framework necessary for an examination of various disciplines within systems parameters. In his actual writings his general systems perspective always informs which issues he raises and how he raises them. It clearly set the tone for his discussion of various systems.

The systems view fits into the more general program in which Hegel draws out some general similarities in the various domains of life in his logic; it is in the context of this work that he first attempts to explicate the unities among the various systems. The task that von Bertalanffy sets for general systems theory was thus certainly also a task Hegel set for his own theory in the context of his logic and Real Philosophy: In Bertalanffy's words: "General systems theory ... is a logico-mathematical field, whose task is the formulation and derivation of those general principles that are applicable to 'systems in general'".[468] Hegel too looked for principles applicable to all systems. And his results were not far afield from those of the earlier fathers of systems theory, whether or not they were directly influenced by him.

Many systems theoreticians indicate that they are acquainted with general ways in which their ideas were anticipated historically by diverse philosophers. Bertalanffy mentions the concept being found in Nicholas of Cusa, Paacelsus, Vico, Ibn-Khaldun, Leibniz, Hegel and Marx.[469] Lazlo particularly mentions his early enthusiasm for Whitehead.[470] Luhmann also indicates that the history of the concept, present from the antique, albeit in the form of problematics concerning wholes and parts. Yet, none of these theoreticians clearly appreciated the depth of the similarity between their ideas

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[467] See "Mathematical Aspects", 3; quoted in Yudin, Systems Theory: Philosophical and Methodological Problems, 192.
[468] Bertalanffy, General Systems Theory, 266.
[469] Bertalanffy, General Systems Theory, 11.
[470] Lazlo, The Relevance of General Systems Theory, vii.

and some of those found in the philosophical tradition, particularly in Hegel. For Hegel did not merely have very general ideas like those expressed in the above-cited texts of early systems thinkers: he also went on to concretize his views in important ways, as I have shown in this work. There has been too little knowledge of these historical parallels.

For all the similarities between Hegel's perspective and that of modern systems thinkers, there are some difference which I shall now point out. The first of these has more to do with intention than content: it basically consists of the fact that science no longer tends to seek its justification in philosophy. For Hegel and other transcendental philosophers of science, however, this was different. They maintained that systems can only be "true" scientific systems if they are grounded in reason. Bodies of information not grounded in reason's principles were not really systematic. Reason first gives information its organizing principles. The objects of scientific interest and systems developed in reference to such objects react to the human will, undergoing development only because of humanly-willed action, but they are scientific only on the condition that they responded to a rational will. Reason determines the will and the systems of scientific interest according to its own goals and purposes; it also defines the borders of the system and secures the system's reproduction. In Hegel's terminology, this provides it with "life" and makes it into an "organic unity". Systems theoreticians by and large do not share the transcendental philosophers desire to somehow root all scientific thought in reason. Reason does not need to supply principles for systems to be systematic. Empirical principles will do just fine. In general, however, instead of arguing that empirical principles are just fine, the subject is not discussed at all. (Ecosystems theory here seems to be an exception. There attempts are often made to root systems theory in our biological presuppositions and human needs.[471])

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[471] See, for example, Finke, "Über Mauern und Hecken", Jahres Berichte der Gesellschaft für International Germanistik, 21. 1969, 110-131. See also Bertalanffy, 240. Bertalanffy argues that because they facilitate survival the categories are not entirely relative. He sees a developed systems theory as essentially also taking over the traditional role of a category teaching. S. Bertalanffy, 85, 86.

Another difference is strongly tied up with the lack of evolutionary theory in Hegel. Given their reliance on evolutionary theory many modern systems theoreticians do not characterize systems as having a determined course of development, but instead view them as subject to chance changes.[472] And because of the importance of mutations and cross-fertilization in biological systems, the importance of "difference" and variation is emphasized more than in Hegel's view. Such difference is viewed as the motor of evolution.

Hegel, however, by no means purchases his interest in unity at the cost of all difference. There are numerous ways that Hegel's theory emphasizes the need for difference. First, difference – in particular negation – is the motor of development in the logic.[473] As Croce points out, the use of the term dialectic – used to describe the Hegelian dialectical unity – also emphasizes the "unrest" of a system striving for unity. The Hegelian unity is always a unity of opposites.[474] Second, his organism model itself accentuates the importance of manifoldness of parts in a particular organism. So is it that the whole cannot be maintained unless the parts are maintained.

But in light of the developments in the sciences of life, Hegel's views of difference are not positive enough. For Hegel also indicates that the difference between organisms in a species demonstrates the "feebleness of nature"; the individuals never reveal the "truth". The manifoldness of nature is more a sign of its "untruth" or distortion, its inability to reflect a pure idea. Similarly, the particular characteristics of the organisms are not seen as important at all in shaping the future of the organism.

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[472] Here too though caution is warranted. While a major trend in systems theory sees cultural and natural systems as developing according to the same model, i.e., a specifically Darwinian one, some thinkers, like Habermas, would point to a difference between cultural and natural systems, noting that natural ones follow a Darwinian model, but cultural ones a learning model more closely resembling the biological view developed by Lamarck. Cultural systems, according to this viewpoint – which I find more convincing –, develop in accordance with what Habermas calls deep-seated anthropological interests. Accordingly, the forms of development are conditioned by this, and they are not open to chance in as dramatic of a way as biological systems, where absolutely chance mutations lead to either advantages or disadvantages. Cultural development occurs according to universal goals, embedded in anthropological interests.

[473] See Croce, What is Living and What is Dead in Hegel's Philosophy, 57.

[474] See Croce, What is Living and What is Dead in Hegel's Philosophy, 21.

They are all inessential and can have no role in shaping the future nature of the species. Instead, an unchanging essence is simply passed on.

Further, the fundamental importance of difference – in the concept of negation – belongs to the domain of the logic, and is not viewed as applying to the natural history of organisms, which is seen as essentially consisting of a non-historical repetition of eternal forms in which each organism simply passes on the unchanging, general characteristics of its species. And as in the species, so too in the systems. In general, the development they undergo is the development towards implicit goals they have always had.[475] And in this difference does not play a defining role. Exactly how this affected his political views or general views of other sciences can only be hinted at and guessed. It may have wielded a subtle power, influencing Hegel's views of all systems, perhaps accounting for some elements of his political thought like the support of monarchy. But it would be very difficult indeed to draw strong causal relationships here. It is quite clear though that in the wake of evolutionary theory many modern systems theoreticians see more open futures for all systems than Hegel did and tend to emphasize the need for manifoldness in all areas of life much more than Hegel did.[476]

But even this point in reference to evolutionary theory should not be overemphasized, for Hegel does not seem to exclude the possibility of evolutionary theory. While his own stance on the issue

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[475] Despite Hegel's historicizing of cultural processes, in certain respects he limits possibilities for fundamental changes. This is evident, for example, in the "deduction" the monarchy as the rational form of the state.

[476] Criticizing Hegel along these lines, however, may be roughly equivalent to reproaching Hegel for having been born too soon. Had he lived to see a more successful defense of evolutionary theory, there is no reason to believe that he would not have incorporated it into his theory. But precisely because he lived when he did, he shared in the blindnesses of his age, and this caused his theory to suffer; his theory, like everyone else's, suffers from the inadequacies and blindnesses informing the times in which it was developed. In Hegel's case, the blindnesses are particularly evident in his political and biological theories. His biological views have been explored. The problem in his political theory is that he offers his own views of a rational state as the external model of reason and blatantly overlooked the importance of non-European peoples in political reasoning and their potential input in political dialogue and development of political principles. In short, though he took steps towards a view of public rationality, he did not escape his individual model of reason fully enough to satisfy many modern thinkers. But even here: while

of evolution clearly shows his embeddedness in the science of his time, and while it does fundamentally shape his view of organisms and exudes a strong influence over his view of systems, even here it is important to notice that "stability of form" is not necessary to understanding any of the key concepts used in Hegel's explicit description of the organism concept. Those main categories are: form, assimilation and reproduction. But it is not said that stability of form is essential to his understanding of the organism.

In sum then, though there are distinctions between Hegel's theory and modern systems theories, the earlier-mentioned similarities are more impressive than the differences. Hegel's view of the organism also represents an attempt to overcome many of the same impulses that systems theoreticians see themselves fighting against. It counters the deficiencies of a fully atomistic view of the world. It emphasizes the inter-connection of various disciplines and spheres of life, the mutual dependency of concepts within a language, etc.

In closing there are two last concerns, the first difficulty having some relation to systems views, the second, less. The first issue may shed some light on present systems theory because it concerns the difficulty of viewing the "system of systems" with the same criteria that is used in viewing the sub-systems. This difficulty arises if this "super-system" is to include everything. In Hegel it can be seen in reference to the view of the idea. Because the idea in its most general sense includes everything, it cannot be understood to have the processes of assimilation or reproduction (which both require interaction with another). It cannot assimilate anything external to it - for there is nothing to assimilate; neither can it interact with anything external and fulfill itself in that other. The assimilation and reproduction processes, described as necessary for understanding the organism, are singly inappropriate for this "set of all sets" that includes everything in itself. Questions then arise about the appropriateness of the organic characterization: can this be fruitfully referred to as an

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he does not have an explicit view of an intersubjective dialogue of all peoples aimed at truth, he does appear to think that rational social relationships are necessary for the unfettered development of individual reason.

organism at all? Any systems view entailing a process of assimilation and with a broad enough characterization of the main system would encounter this same problem.

Another question surrounds the apriori status of this view of the organism with its processes. This is questionable for two reasons. First, with all of the empirical examples in the logic it often looks as if he does not deduce the idea at all. Second, even if he has pinpointed a universal characteristic of certain systems, does this make it an apriori?

Regarding the first point, we may not have as much cause for worry as is usually thought, for according to Hegelian theory it might well be possible that the developments in the empirical sciences lead to developments in philosophy. In the early chapters of the Enzyklopädie Hegel indicates that philosophy works over the centuries to "bring what it is to consciousness".[477] This view clearly implies that there is a difference between using principles and being conscious of those principles: it is one thing for mind to act according to its laws and quite another for it to know what those laws are. His views in the History of Philosophy that the philosophical discipline even thanks the empirical sciences its own development also make more sense when this fact is kept in mind. Gaining consciousness of how mind works is the goal of the logic; and this discipline develops historically just like all others, even incorporating knowledge of other disciplines to itself. It may thus well be that we even owe the clarity about how our own thought processes work to developments first made in other disciplines. So it is not really problematic that Hegel claims to be making a transcendental deduction of the idea of life, and that we find, at the same time, that he seems to have lifted his idea from the empirical life sciences. He can simply maintain that mind works and has always worked according to the so-described processes, and we have finally gained the tools (thanks to the philosophy of life) to see that this is so. This could clearly be an incidence of philosophy progressing only because the empirical sciences have. (It is, of course, nonetheless, necessary for it

[477] Enzyklopädie, §13.

to be convincingly shown how the logic necessitates the determinations; and we can surely still question whether Hegel has really succeeded in doing this.) Theoretically it is not really problematic that Hegel incorporates ideas from empirical science into his theory in certain ways: and this shows much of the criticism against him on this point to be superfluous.

The second point seems to me more problematic; for whether we need to attribute the systems views in question to the structure of human logic is quite another matter from whether such systems views are correct. Universality does not imply apriority. It seems to me that Hegel got a large part of his systems characterizations right. We continue in some broad respects to perceive organisms and other systems as Hegel did, i.e., as forms in a process of development that assimilate things in the external world as they cultivate a state of equilibrium. We also continue to perceive other systems as working according to similar principles. But, while systems may well be broadly like Hegel describes them to be, i.e., structures that undergo assimilation processes and reproduce themselves, it is of course questionable that we attribute the cause to our thought structure.

Hegel's choice of terminology certainly contributes to the problem of accepting this type of structure as an apriori. The view might indeed seem more feasible to many if he had simply used other words, for example, defining the "organic structure" as the structure of "systems" instead, and including states, plants and other things under it – as many indeed now do. But even if we can make his view more attractive by re-packaging it in such a way, need we consider these attributes to be characteristics of an apriori thought structure, or is it that the science at his time had simply developed to such an extent that it was possible to perceive this truth about organisms and other systems?

The question concerned is of importance for all teachings of the apriori. What exactly is apriori?: the state of the world? The state of our minds? Is it anything we must think? How do we limit our lists of the apriori? When we find out some fact about ourselves, have we found out about our category

structure? Why do we not then include the senses and feelings among our apriori lists? Why not concepts like up and down, forward and backward, left and right? I suspect people will everywhere also come to use those classifications. (Are they all included in place?) Gaining clarity about these questions is quite difficult. I quite suspect that a lack of clarity about such questions is one reason for the contemporary rush to dismiss all categories, but unfortunately this is not a matter that I will be able to settle here.

Even among those sympathetic to a category teaching, however, Hegel has often been criticized for introducing too many empirical elements into his logic. Rosenkranz was one of the first to maintain this, and he omitted "life" from his own list of logical categories. "Life" and the "organism" are not logical categories according to him, but empirical ones. That we largely view organisms as Hegel indicated is then presumably because we live in a world in which we experience such things. Even if this is part of a "universal" human experience, we need not conclude that it is apriori; and were we to accept that universality shows that something is apriori we could conveniently expand our list of a priori ideas extremely widely. Rosenkranz joked about this possibility saying that we could perhaps include warmth, cold and an incredible list of other things. According to Rosenkranz, then, while Hegel is right to look for general structures in human experience, he may well have underestimated the role of cultural learning processes after all.[478]

I will certainly not resolve the issue here. But again, regardless of the appropriateness of including the "organism" in the list of categories, Hegel did put his finger on some thoughts that have proved revealing: the concepts of teleology and the systematic view of organisms Hegel explicated have not been made obsolete. The general systems concepts that Hegel described are still used; and it is it not far-fetched to continue to argue with Hegel and Kant that teleology is “quite indispensable to

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[478] For more details see Hösle, Hegel. C.F.J. Rosenkranz, Kritische Erläuterung des Hegel'schen Systems, Königsberg, 1840; reprinted Hildesheim: 1963. Meine Reform der Hegelschen Philosophie, Königsberg, 1852. System der Wissenschaft, Königsberg, 1850.

[the] judgment"[479] of some realities. Regardless of whether Hegel was right to have attributed these systems characteristics to apriori determinations of thought, looking for the similarities in all systems may well have facilitated his perceiving some basic truths about systems in general; and we can still maintain with Jacques D´Hondt that "[l]e concept hégélien a la vie dure!"[480]

In the early nineteenth century it seemed to some German transcendental philosophers to be necessary to attribute a concept of an organism to an apriori thought structure if the sciences of life were to be grounded in reason and thus granted real scientific status. So there was, of course, a reason a lot of people may have wanted to interpret it as one. While this need has disappeared for all practical purposes,[481] the projects of universal pragmatics, incorporating elements of early transcendental philosophy are still worth exploring, if not other attempts outside of the philosophical mainstream.[482] Similar questions still arise there: what are the conditions necessary for language aimed at understanding? For the use of rationality? Delineating exactly what the parameters of this teaching are and what ideas can be included in it transcends the limits of this paper, but it will clearly have some relationship to this discussion of the apriori.

Hegel's intentions seem clear. He wants to account for the life sciences and other developing systems. In doing so he emphasizes the role of teleology in understanding. Hegel was not unique in

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[479] Kant, Kuk, §77.

[480] Jacques D´Hondt, "La Concept de la Vie, chez Hegel", 150.

[481] A Hegelian theory might still gain much from taking sight of biological theory though. Taking advantage of Darwin's theory, a "biologically"-oriented Hegelian theory would certainly allow us to better explain the origin of categorical structures, which need then be seen as adaptations for our survival, mirroring reality, because they would otherwise lead us down dead end tracks. (For one view of how this was done historically see Robert J. Richards, Darwin and the Emergence of Evolutionary Theories of Mind and behavior. Richards outlines Spencer's views of the evolution of the categories. The category structure is portrayed as having facilitated our survival, thus having become biologically embedded. On the basis of the fact that it has allowed us to survive, it is argued that the categories are objective determinations of the world.) The emergence of the categories is, however, just one issue that a modern biologically-oriented theory could touch upon. Any empirical theory of the "organism" which might be incorporated into a larger worldview today, with similar intentions to those of Hegel, would also certainly emphasize the network of systems, their mutual impact upon one another, their developmental tendencies, and so on. Such a theory would of course take evolutionary theory, cell biology and other relevant developments in biology into account. For such a perspective the individual characteristics and manifoldness of nature and cultures is more clearly seen to be essential.

doing this; instead, the attempt reflected the temper of the times. What Thomas Sprageus said of Hobbes is thus probably also true of Hegel: "Conceptual patterns and models developed to deal with natural phenomena became prisms through which he perceived human and political phenomena."[483] While mechanics governed as the paradigm case for Hobbes and his contemporaries, organics served Hegel and his.

The life sciences helped set the temper for Hegel's agenda: Hegel clearly incorporated the views of 19th-century life scientists into the logic. If we read Hegel as being aware of what he is doing in the logic, then we must conclude that he saw the developments in organics as allowing him to understand the idea with greater clarity. As such, looking at the life sciences of Hegel's time can offer us greater insight into his thought. What is more: looking at his view of organic systems still sheds light on important aspects of many systems.

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[482] See, for example, Michael Wolff, Kants Urteilstafel.

[483] Quoted in Lisa T. Sarasohn, "Motion and Morality: Pierre Gassendi, Thomas Hobbes and the Mechanical World View", 363.

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