The Fiery Crucible, Yorick's Skull and Leprosy in the Sky:
Hegel and the Otherness of Nature
(with a concluding, unscientific postscriptum)

The strange images in the title of this paper are Hegel's own. They occur in three different contexts where each is used to portray, or represent, truth that can and must also be expressed in the systematic, speculative discourse of Science.[1] I believe that these textual references, taken together, help us understand, in a new way, one of the most persistently troubling aspects of Hegel's philosophy: the systematic relationship between thought and nature.[2] Rather than attempting to contribute to this debate by referring primarily or indeed exclusively to the conceptual articulations of the *Encyclopedia* and the *Greater Logic*, reinterpreting Hegel's richly speculative language in a "definitive" fashion, I want to approach the problem from a different angle, both by beginning with the ideas in their imaged, intuitive presentation and by referring to texts that have, to my knowledge, never been considered in this context. Certainly, they have never been taken together, as I am doing, to form an argument.

Each of the three textual references and its image raises a question. It is the investigation into these questions that determines the course of the paper's inquiry. This can be articulated in several ways. On one hand I am inquiring into how Hegel's *Philosophy of Nature* is meant to work within his system of science as embodied in the *Encyclopedia of Philosophical Sciences*. However, on a more radical level, my inquiry deals with the problem of natural otherness itself: how does a comprehensive system of thought incorporate or comprehend the deep difference of nature?[3] The answer to both inquiries is the same. We arrive at it by lingering before the three pictures I am presenting and following the conceptual issues that derive from each of them: 1) How

"other" is natural otherness? 2) How does natural otherness become part of the system? 3) What form does natural otherness take within the system? These three questions, with their corresponding images, are the three main headings of this paper. Thus "the leprosy in the sky", the "fiery crucible" and "Yorrick's skull" represent the lineaments of my argument.

1. The gleaming leprosy in the sky or how "other" is natural otherness?

The poet Heinrich Heine describes in his memoirs how he, as a young man, met the famous philosopher G.W.F. Hegel at a dinner party in Berlin. Following a satisfying repast, and before retiring to the whist tables, the two great figures of German letters found themselves beside each other, looking out the window at the starry 19th century sky. Heine, enthusing about the stars, called them the abode of the blessed, to which Hegel grumbled: "the stars are only a gleaming leprosy in the sky".[4]

This remark of Hegel's always pleased me: it bespeaks his refusal to be edifying. However, it also illustrates a challenge to those of us who study him: what does Hegel make of the chaotic contingency of nature or, to put it another way, what are we to make of Hegel's philosophy of nature? This crucial part of the system, which appears at the crossroads between the *Logic* and the *Philosophy of Spirit* in his *Encyclopedia of Philosophical Sciences*, has generally been seen as an embarrassment to those who believe Hegel is an important thinker.[5] True, against today's notion of science as theoretical[6] and experimental, it is hard not to be perplexed when we read Hegel's *Naturphilosophie*. Here, it seems we are meant to believe that nature itself runs along dialectical lines or that the laws of nature are dialectical rather than causal, mathematical or statistical.[7] At first glance, it would appear that natural phenomena are meant to

follow the same logic that we find in the *Logics* themselves and throughout the Hegelian system. In other words, it is hard to take seriously a philosopher who explains the solar system as obeying the dialectical beat of In-itself (e.g. the sun), For-itself (e.g. the moon), For-another (e.g. the comets) and the In-and-for-itself (e.g. the earth).

We might call the view identifying nature and logic the *processional* way of understanding Hegel's philosophy of nature. According to this view, nature itself appears as a blind process that follows an inexorable, orderly logic of development. Hegel's *philosophy* of nature is supposedly the accurate reflection of this process. I believe this naive interpretation of Hegel's philosophy of nature is the what William Maker criticizes as absolute or metaphysical idealism: the philosopher is perceived as reducing everything to the articulations of thought.[8] I believe the processional interpretation is particularly well represented in contemporary French thought, through those thinkers, both Hegelian and anti-Hegelian, who either studied with or were inspired by Jean Hyppolite's anti-anthropological view of dialectical progression, both in history and in nature.[9] Thus, Marxist thinkers are able to view Hegel as the upside-down, idealist image of materialist dialectics. For both scientific materialists and processional idealists, the movement of reality follows dialectical logic, whether it is reality that determines the logic or vice versa. Of course an absolute idealism is very hard to distinguish from an absolute materialism and consequently when Engels writes, "[...] the dialectical laws are really laws of development of nature and therefore are valid also for theoretical natural science", he could easily be expressing the point of view Maker attributes to the absolute idealists.[10]

The question is, how "other" is the otherness of nature, in Hegel's *philosophy* of nature and therefore in the system as a whole, or, what are we to make of the "gleaming leprosy in the sky"?

Indeed, most of the literature on Hegel's philosophy of nature seeks to understand how the philosopher relates nature to thought.[11] This inquiry is sometimes explicit but it is also implicit in the two "other" main currents of interpretation, which are also addressed in the course of my argument: how the empirical sciences of Hegel's day are related to his philosophy of nature, and, more rarely, understanding the transition from the Absolute Idea, at the end of the *Logics*, to natural being, with which the *Philosophy of Nature* begins.[12] In both these cases, the question also turns upon the degree to which nature and logic are really different. The processional view, which I outlined above, represents one pole in this debate, where nature and thought are perceived as being immediately interpenetrated, where there is no substantial difference between them. Here, scholarly activity often takes the form of "discoveries", within the *Philosophy of Nature*, of various forms and articulations that can also be identified in the *Logics*.[13]

Ultimately, the processional view is self-contradictory in terms of Hegel's own conception of systematic science.[14] This is because it cannot but imply that the system itself is a purely arbitrary construction and this is something Hegel denies in too many places to mention. For according to the processional view, our philosopher must simply be the one who happened to be perceptive enough to observe, from an external position, that everything in nature runs along dialectical lines and who was able to write a philosophical system describing this process. The *Philosophy of Nature* and its integration into the *Encyclopedia* would thus depend entirely upon the observations of the

philosopher who recounted them, who thus becomes the only thing holding the system together. The *Logics* and the *Realphilosophie* parts of the system thereby merely reflect one another in an analogous way, a reflection which Hegel was able to notice and describe. Kierkegaard, an ex-Hegelian in good standing, was right in noticing the absurdity of the processional view, although it was the only one he knew, in that the supposedly objective system of science becomes an arbitrary, subjective artifice, that supposedly reflects the inherent logic of nature itself. In fact, the objectivity of the philosophy of nature lies elsewhere than in the reliability of Hegel's account. It lies in the actual *content* of the philosophy, which is drawn from the work of the natural sciences of the day. It is true Hegel wrote the philosophy of nature, but in doing so, he referred to what he felt were the pertinent texts of his time. I will return to this later.

As well, how can we possibly reconcile this idea of the wise philosopher who observes the laws of logic reflected everywhere in nature, with the man who, looking out on the night sky, into the very heart of nature, sees only "a gleaming leprosy in the sky"? How can a philosopher who is supposed to believe that nature runs on the same inexorable laws as those governing logic, look out on the heart of nature itself and see only chaos, contingency, a pox on the sky? The processional view attributed to Hegel's philosophy of nature encounters an insurmountable dilemma when faced with the bad infinity of natural contingency: for the philosophy of nature to be an accurate reflection of nature's processional logic, it must ignore or leave out natural contingency,[15] but in doing so, it can no longer be an objective account of nature. Clearly then, the philosophy of nature must be something other than Hegel's faithful account of nature's immanent logic.[16]

Most importantly, Hegel's reported description of the heavenly vaults as a "leprosy in the sky" does more than simply evoke the theoretical problem of contingency, a problem he deals with in the logic.[17] Hegel's epigram displays a real revulsion to nature itself, to its overpowering, chaotic, undisciplined presence, to its refusal to be ordered, to its swarming lawlessness, to its tendency to slide into bad infinity.[18] In other words, Hegel's epigram seems to reveal a radical, pressing "otherness" in nature itself that can not simply be "left out" of his *philosophy* of nature, as if such an account could proceed, diligently following an immanent logic, regardless of nature's most persistent, contradictory quality. Understanding Hegel's philosophy of nature therefore seems to imply coming to grips with this "otherness" of nature. This is why those Hegel scholars who deal with the problem of systematicity or with the relation between the logic and the *Realphilosophie* must answer, at least implicitly, the question of natural otherness. I believe the rich diversity of answers to this question can best be grasped according to the degree of otherness the commentators recognize between nature and thought in Hegel.[19] A glance at some of these approaches will give us an idea of what is at stake and reveal some of the difficulties involved in finding a solution. The very fact that there are different, often opposing approaches shows that there is a problem and that it is not sufficient to "solve" the question of natural difference by invoking such Hegelian mantras as "identity-in-difference" or "identity of identity and difference". These articulations may not be false but they are truly *Vorstellungen*, or examples of the representational thinking that enables us to *understand*, in the sense of *das Verstand*, what is speculatively difficult to grasp only by fixing it in stasis. As such, these handy expressions cannot

capture the dynamic relationship between thought and nature, which I am presenting in this paper.

On the other end of the interpretive spectrum from the processional view, William Maker sees nature in Hegel as having "nothing in common" with thought.[20] Indeed, for philosophy to have anything pertinent to say about nature, philosophy cannot be a system that already includes nature within it. Thus, we can say that Hegel "neither denies the genuine existence of an independently given nature, nor conceives of given nature as a product of thought, nor identifies thought and nature".[21] As a system, Hegel's philosophy recognizes natural contingency within it and yet as radically "other" than thought. According to Maker, only such a system *can* have anything to say about nature. The reason, as we discover more clearly in his later, cited article, "Idealism and Autonomy", is that for logic to be meaningful it must be self-determining, autonomous or free of natural determination. It therefore must imply its own liberation or freeing from nature in such a way as to leave nature equally free. "The full realization of the autonomy of the logical – its completeness as self-determined - involves the acknowledgment of another autonomous domain..."[22]

From a systematic point of view, Maker appears to see nature as a kind of logically necessary self-limitation or self-determination, without which the system would not be determinate at all. Nature is determined as externality *within the system*, since "systematicity precludes determinative reference to anything outside the system".[23] As well, Maker insists that such otherness cannot be thought of in terms of the difference implied by consciousness, since consciousness is evacuated at the end of the *Phenomenology*.[24] Seeing difference in terms of consciousness gives rise to metaphysical

idealism in the guise of empiricism. The otherness of nature must therefore be seen as a *systemic* necessity, implied by the dialectical nature of Hegelian science. This necessity carries onto the reciprocally autonomous status of logic and nature within the system.

I find there is much to like in Maker's approach, in his acknowledgment of the radical otherness of nature without fear of the contradiction this entails from the systematic point of view. However, I find a Fichtean or Spinozist resonance to his interpretation, one that we will re-encounter in other attempts to consider the radical otherness of natural contingency as forming an internal condition for the system's own freedom. For there is something in Maker of the ambiguous status of Fichte's Not-I, which is still meant to be part of the I = I, or the difficulty inherent in Spinoza's attempt to embrace difference though a distinction between nature as *naturans* and *naturata*. In both these cases, as in Maker, the question arises as to how can something that is part of the system preserve its character of radical otherness? As we will see, the approach I am putting forward perhaps resolves this problem by envisaging Hegel's system as one that is open, i.e. open to the radical otherness of natural contingency that must fall outside it but which is nonetheless posited by the system's Idea itself.

I also do not understand Maker's refusal to consider the otherness of nature as symptomatic of consciousness since this would imply a metaphysical empiricism, reducing nature to the status of subjective representation. I think it is possible to consider natural difference as implying consciousness, but only on condition that this be taken in an absolute sense, in terms of the Idea's self-consciousness and not as the particular consciousness of individuals.[25] But more of this later.

The other remark I would like to make about Maker's interpretation, particularly as represented in "Idealism and Autonomy", concerns what I see as the Kantian aspect of his argument. Rather than pertaining to such First Critique elements as subjective categories and the sensuous intuitions of objectivity, however, Maker's insistence on autonomy seems strangely reminiscent of the Second Critique, where freedom is presented as the subject's reasonable self-determination, precisely in that it is free of the determinacy of nature. This runs counter to Maker's own dismissal of the subject-object split after the *Phenomenology*. However, it does tend to reinforce the notion I just put forward, attributing self-consciousness to the Idea itself, since Maker's insistence on freedom seems to recognize the (absolute) subjectivity in the Idea.[26]

Like Maker, Ardis Collins sees natural difference as integral to the system, specifically, as a necessary internal tension, although she is not against viewing the opposition between thought and nature in more anthropological terms, as the life of Reason. Thus, "Reason has expanded into what it is by making the very resistance of this other essential to its life". This dynamic is carried over into the system itself, where "philosophy must expect to find in what empirical science discovers not only what corresponds to the structures of pure logic but also what enlarges and enriches these structures [...]"[27] The fact that Collins finds inspiration in the *Phenomenology* perhaps accounts for her disagreement with Maker's claim that systematic difference is not a matter of consciousness. For her, this work presents a series of contradictions involving the conscious experience of nature through empirical science, a process of contradiction that never ends and is not evacuated in absolute knowing. In fact, it is precisely this irrational otherness that erupts at the end of the *Logics*, producing nature.

The enriching role that Collins attributes to the empirical sciences, with regard to the logic, tends to move her to the center of my spectrum, where she occupies a position not dissimilar from that held by Burbidge, for whom the empirical sciences participate in the elaboration of logical categories.[28] For both scholars, the empirical sciences offer a possibility of mediation between thought and nature, although this mediation is more complete chez Burbidge. I share this position, although, as we shall see, I see at as actualized in a very particular sense: as scientific discourse.

Richard Dien Winfield, qualified by Burbidge, we recall, as one of those, along with Halper, for whom "philosophy of nature and philosophy of spirit are simply extensions of logic...",[29] does indeed see the "autonomy of reason"[30] as necessitating its radical divorce from natural determinacy. Strangely, his insistence on freedom of thought as a justification for its separation from nature mirrors that of Maker, although we have painted their positions as deeply opposed. Indeed, the former sees the "self-constitution of the concepts of nature and spirit" as an "immanent development" of reason,[31] a position which seems identical to what Maker disparages as metaphysical idealism. The fact is, Maker sees thought's freedom from natural determinacy as guaranteeing the existence of reality that is "ontologically distinct from the system of thought"[32], while Winfield liberates "reason" in order to save it from the "dogmatic presuppositions" inherent in "empirical content".[33] To put it (perhaps too) bluntly, Maker seeks to save nature from thought, while Winfield seeks to save thought from nature.

As well, neither of these two positions captures "the leprosy in the sky", the Hegelian nausea arising from the encounter with raw nature. Winfield's account of the philosophy of nature seems to simply ignore it.[34] Maker "saves" nature by elevating to

the status of existence or reality, both of which are on a higher ontological plane than the one where Hegel places nature itself.

I want to stay with Winfield's account for a moment, in order to show how it is both different from and similar to what I have described as the processional view. This will allow me to present my own view of dialectical movement, in contrast to both the processional view and to Winfield's account of logical progression. This distinction is crucial to my overall argument and to the essential role it assigns to the natural sciences, as philosophical content. I defined the processional view as claiming that nature itself ran along dialectical lines and where the philosophy of nature is simply the reflection of this truth.[35] Such a view does not really distinguish, then, between nature and the philosophy that reflects it, since ideally, from the processionalist point of view, the two should appear the same. This is not Winfield's view. For him, the progression is entirely logical; it takes place entirely within the *philosophy* of nature, which is the progression of the *categories* of nature. Nature itself is not, as such, part of this process. At best, it can correspond to the self-developing logical categories that explain it. Philosophy of nature and nature itself are distinguished, even radically separated, in order for the former to be free from natural determinacy. In other words, thought, through the philosophy of nature, can conceive nature systematically by deducing the logical categories specific to it, without having to deal with presupposed empirical content.[36]

According to Winfield, we should consider the *Philosophy of Nature* as beginning with the logical self-founding category of self-externality. This determinacy is nothing other than space, "the most elementary component of all future dimensions of nature".[37] Having derived its first category, the *Philosophy of Nature* follows the path of "self-

constitution", of the "immanent development"[38] of categories, whereby each subsequent form arises out of the former, so that all that is natural is already pre-supposed in the category of "space", which is involved in any subsequent determination, i.e. time, place, motion, matter, etc. So, we might say that Winfield's view of the philosophy of nature is processional, without ascribing this logical movement to nature itself.

I have always found this idea of logical *self*-development implausible, the idea of the dialectic functioning as a kind of self-animating ghost in the machine. What possibly could possess a logical category like "being" to transform *itself* into another category like "nothingness"? I believe what Hegel is saying is this: when we (speculative scientists) really think about being, we grasp that it is nothingness; when we really think about this passage from being to nothingness, we grasp what is "becoming", etc.[39] It seems to me that Hegel is clear about the role of systematic, speculative thought when he explains dialectical movement, in the Introduction to the *Phenomenology*, as a movement of determinate negation. This progression involves a systematic/scientific point of view that is always outside,[40] the developing content itself and yet necessary to its movement. This external point of view is that of science which remembers itself as *content* and thereby *makes sense* of its content in terms of a systematic dialectical movement. Just as in the *Phenomenology*, forms of consciousness make up the content that is to be considered from the scientific perspective, in the *Philosophy of Nature*, science's *content* is space, time, place etc., in their movement of determinate negation. As content, however, these are not abstract concepts but rather the actual fruits of the physical sciences, as presented by Galileo, Kepler, Laplace, Newton et al.

One might object that understanding the dialectical movement of determinate negation in this way is specific to the *Phenomenology*, where Hegel is dealing with forms of consciousness, things that have a point of view. But this misses the point. When Hegel, in the Introduction to that work, writes, "for us", he is referring to the point of view of systematic science, the beyond-*Phenomenology* view that is thinking its content. It is this scientific view that supplies the movement: "*for us* [what has arisen] appears at the same time as movement and a process of becoming."[41] Or again, "This way of looking at the matter is something contributed *by us*, by means of which the succession of experiences through which consciousness passes is raised into a scientific progression..." It is true this progression "is not known to the consciousness we are observing",[42] but I don't think this ignorance on the part of scientific content itself affects the dialectical movement Hegel is describing, which results from the scientific or systematic thinking of its content. What I am saying is this: dialectical movement is "for us", for our thinking as Hegelian scientists thinking the actual content of science from the point of view of the system. Or, dialectical progression only takes place within the system, to the extent a systematic point of view considers that which forms its content.[43] Seeing dialectical progression as a kind of unilateral self-movement that passes from one determination to the next, as Winfield does, means that the actual *content* of thought goes unmentioned. This is important because the dialectical movement we witness in the philosophy of nature is generated by systematic thought thinking the natural sciences as content. Although this movement takes place "behind the backs" of the particular positive sciences, it is there *for us*, Hegelian scientists.

2. The fiery crucible or h*ow does natural otherness become part of the system?*

Twenty-odd years before the Berlin dinner that Heine remembers for us, some time between 1803 and 1806, when Hegel was at Jena in his first university post, he wrote a strange, feverish, almost poetical passage in a personal journal. The fragments of this journal or the *Wastebook* aphorisms, as they are sometimes called, are important for several reasons. They reflect Hegel's *personal* thoughts and inquiries at a time when he is struggling to develop his own system, a struggle of false starts and aborted attempts that would eventually produce the *Phenomenology of Spirit*, published in 1807. As well, the Jena fragments show how our philosopher's thought is growing apart from that of his friend and colleague, Schelling. This is particularly true with regard to their visions of nature and its philosophy.[44]

One journal entry is of particular importance, I believe, for anyone interested in the question of Hegel's philosophy of nature. The passage is highly metaphorical or as Hegel would say, intuitive. In fact, it represents a succinct mythological account that portrays the entire system in terms of what might be called a cosmogony . Hegel himself describes the passage as a "myth", which he borrows from Jakob Böhme and qualifies as barbarous. However, it is important to stress that this does not disqualify it; it simply means the portrayal is representational, creating a picture for the intuition, rather than involving a scientific development.[45] In this way, Hegel's myth is representational in the way that revealed religion presents us with a picture-thinking version of speculative truth, through the idea of the Trinity, for example, or the idea of the fall.[46] These mysterious representations must be distinguished from the representations produced by the understanding. In fact, the speculative representations of the speculative truth, as the

identity of lively differences, is precisely what the understanding finds mysterious. "The mysteries are, according to their nature as speculative content, mysterious for the understanding, not for reason; they are thoroughly reasonable in the sense of what is speculative."[47]

Hegel's mythical account begins, fittingly enough, with the creation of nature. This moment is expressed as a loss of "punctuality", where God, as the absolute singular, "lets itself go" in order to become nature. Rather than seeing that his creation is good, however, God is "enraged" by his dispersal, by this otherness he has become as (*als*) natural contingency.

> "In becoming nature," begins Hegel, "God bestows himself in the glorious, silent orbits and forms, and becoming aware of this expansion and his lost punctuality, is enraged by it."[48]

It is this rage and the resulting violence visited on the "expansion" that will enable us to understand how Hegel incorporates the otherness of nature into the system of science. First, however, I want to look at the "lost punctuality" Hegel uses to describe the transition from God to nature. This is crucial, because what Hegel is really talking about here is the passage between logic and nature. In other words, the divine expansion into natural dispersal is the representation of the passage that occurs between the *Encyclopedia Logic* and the *Philosophy of Nature*, where, in more conceptual terms, the Absolute Idea, as a pure in-itself, as pure thought or pure undifferentiated concept, "lets itself go" to become the complete otherness of nature.[49] This "letting itself go" (*frei entlassen*) is the expression we find at the end of the *Encyclopedia Logic*, where Hegel describes the self-othering of the Idea into nature.[50] The expression *frei entlassen* has

received a certain amount of scholarly attention, probably because its esoteric flavor seems to hold the key to the problem of natural otherness, by providing an origin: how "other" can nature be when it is the self-othering of the Idea? I want briefly look at how two important commentators have interpreted the meaning of *frei entlassen*, in their attempts to grasp the question of natural otherness. What does it mean to say the Idea/God lets itself go to become nature?[51] Or, as Hegel puts it, at the beginning of the philosophy of nature, "[Since] God is absolutely self-sufficient, that which has no need, how does he thus come to decide to become something absolutely Other?" Hegel immediately answers his own question: "In fact, the Godly Idea is just this: to decide to posit this Other outside of itself and to take it back again, in order to be subjectivity and spirit."[52] I am tempted to say that my article is no more than an explication of this remark.

Hermann Braun interprets the expression *frei entlassen* in an original and insightful way in his article "Zur Interpretation der Hegelschen Wendung: frei entlassen". Discovering the same expression within the dialectic of self-consciousness of the *Phenomenology* enables the author to claim that *frei entlassen* can refer to letting the *other* go, just as one self-conscious, having recognized itself in another then frees that other. In the context of the *Encyclopedia*, this otherness appears as nature itself, which can only be intuited and not deduced from the *Logic*. In other words, there is no logical bridge between the *Logic* and the *Philosophy of Nature*. This latter represents a new beginning, the letting go of an otherness which it is assigned as intuitive material and which it must show to be inessential. For Braun, the Idea's "decision" to let itself go as (*als*) nature should neither be seen as an act of consciousness nor as a logical inference

but as an organic necessity. Hence the author's claims to have found the "roots" of *frei entlassen* and *sich entscheiden* (to decide) in a botanical work of Goethe's on the metamorphosis of plants.[53]

I subscribe to Braun's idea that there is a jump between logic and nature which cannot be a matter of deduction, in the usual sense. However, if we take Hegel's absolute Idea at its word, i.e. as truly absolute, I do not see anything wrong with "deducing" nature in a very specific sense, namely in terms akin to those of the ontological argument, where the very "absoluteness" of the subject's essence means it must *predicate* itself as existence. Thus, we might say the Idea has syllogized itself (*sich geschlossen hat*) as the "absolute unity of pure concept and its reality"[54] i.e., reversing the terms, of being and essence, the first two books of the logic. This absolute individual (the syllogistic conclusion of the universal and the particular) can do nothing but "decide" (*sich ent-schliessen*) to let itself go as nature.[55]

As well, I'm not sure the analogy Braun draws is really pertinent or helpful in terms of grasping the otherness of nature. It seems to me there is a fundamental incommensurability between the otherness one consciousness encounters and releases in the dialectic of recognition and the otherness the Idea "lets go" at the end of the *Logics*. In the former case, the other is found already there and present, whereas in the latter case, the Idea does not encounter anything until it has generated nature as its other, *out of itself*. The *frei entlassen* Braun refers to is, in fact, in the *Encyclopedia* text, a "*sich frei aus sich entlassen*" (freely letting itself go out of itself), where the reflexive pronoun appears twice. In Hegel, there is an essential difference between the Idea (God or the Absolute-I) and particular, human consciousness. That difference lies in the (free)

necessity of the Absolute-I to produce its own content while human understanding must face alien content[56] in order to attain the self-differentiation necessary to consciousness. Thus, the problem is, if the Absolute Idea is to be conscious (and we cannot imagine the Absolute as not possessing something as important as consciousness)[57] then it must differentiate itself from *itself* as other, which means that this otherness, viz. nature, is not really other at all, leaving us again to wonder about the extent to which nature is genuinely "other" with respect to thought. Braun's attempt to conceive of natural difference within the system in organic (i.e. botanical) terms fails to get us beyond the Fichtean or Spinozist ambiguities that arise from the other attempts I have discussed.

Dieter Wandschneider observes that while Hegel reiterates in numerous places the *frei entlassen* of the Idea into nature, he never explains why this occurs. Wandschneider attempts to supply an answer.[58] He does so, by concentrating on freedom, in much the same way we witnessed in Maker and Winfield. As with the latter, however, Wandschneider's interpretation clearly sacrifices the ontological status of nature, in order to ensure the independence of thought, in a way we have associated, in general, with the Kantian moral project, where freedom of the self is ensured through independence from natural determination. For Wandschneider, the Absolute lets itself go as nature because, as the dialectical and self-grounding ideal, it must differentiate itself from something that is not-ideal, not-absolute, from which it is free. Thus, "with the Ideal, there must also be a Not-Ideal".[59] This means that nature is defined in purely negative terms, as the Not-Idea which the Idea needs in order to differentiate itself as the Absolute. As dependent upon what it is not, i.e. the Idea, Nature loses the *Selbständigkeit* (independence) Hegel explicitly assigns to it[60], its *difference* as "the sphere where contingency and external

determinability maintain their right"[61], where the heavenly vaults are a "leprosy in the sky". Hence, for Wandschneider, nature remains "logically conceivable" and "logically structured". Nature cannot be "completely undetermined, formless matter", otherwise it would be the same as nothing.[62]

It is no accident that Wandschneider's description of nature as the "Not-Ideal" immediately brings to mind Fichte's Not-I. Grasping nature negatively, as that which is not the Idea, but which is nonetheless required if the Idea is to be dialectical, once again reminds us of the Fichtean or Spinozist problems of natural otherness that have surfaced in our brief overview of the literature, problems of which Hegel was acutely aware.[63] In any case, we are no further advanced in our enquiry into the otherness of nature with respect to thought. Analysis of how the idea "lets itself go" into nature tends to give rise to the same ambiguities that arise when natural difference encounters the system of science: either its otherness is excluded or it is lost in becoming a logical category. Perhaps this is because we are not considering the other half of the Idea's life-course, as we find it in Hegel's aphoristic myth: the wrath of God, or, in more speculative language, the negativity of the Idea.

To understand this, we must first grasp the radical "un-godliness" of nature, what might otherwise be expressed as its "inappropriateness"[64] with regard to the Idea. However, my contention, in referring to Hegel's myth rather than relying exclusively on his speculative texts, is that there is something in the images of God's wrath against the ungodliness of nature that helps us understand the dynamism of the Idea's life-course, through the true extent of nature's insult and the power with which it is suppressed.

The ungodly quality of nature is personified in the fragment, as Lucifer, the fallen angel. The inspiration for this analogy is once again Jakob Böhme, to whom Hegel refers explicitly in the same passage as well as in other Jena aphorisms.[65] However, even without this reference, the Lucifer metaphor clearly shows the hybrid aspect of nature itself, its angelic, divine origin in the Idea and its fall[66] to what is furthest removed from godliness: evil. The metaphor also shows us that, just as Christianity denies evil any kind of substantial, Manichean reality, nature cannot claim completely substantial status with regard to the Idea. On the other hand, although Nature derives its origin from the Idea, it is *not* the Idea, any more than Lucifer *is* God. As radically ungodly, Lucifer does not carry within him the immanent trace of his godly origin, any more than nature carries within it an incipient trace of logic.

Finally, the Lucifer metaphor reveals an even more important element. Just as Christianity sees evil (and good) as a fundamentally human matter, nature should also be seen in the same light, i.e. as a type of objectivity that pertains to humans. I will return to this in a moment.

To return to our aphorism, faced with his natural otherness, with his rebellious dispersal, God is enraged and directs this wrath "towards himself in his otherness".[67] Far from ineffectual, the wrath God turns on Himself is greedy and violently destructive. It must "devour and swallow up" nature, whose "bones must be pulverized; [whose] flesh must be compressed and liquefied," writes Hegel, enthusiastically. This rage against natural otherness can be understood as the desire for self-recovery, for the recovery of that absolute punctuality which has been lost in natural dispersal. However, we must not lose sight of the violence of this assimilation, where nature is digested in a fiery

"crucible", to reappear as a realm of shadows. This "spirit of nature" arises as "free spirit", purified.[68]

In conceptual terms, the fiery "crucible" or blast furnace in which the bones of nature are melted down is the negativity of thought, the dialectical soul of the Idea itself. All otherness, "its entire extended realm", must pass through the fiery crucible of thought in order that the Idea may recover itself in its now mediated, absolute singularity. For this to happen, pure, brute, immediate nature must be thought, negated and transformed, thereby losing its original character of otherness, of un-thought. In its new spiritualized form, nature can make up the content (*Gehalt*) of the philosophy of nature and therefore, of the encyclopedic system of science. From this systematic point of view, we can say that pure thought in-itself (the Logic) has become for-itself (Nature), and finally In-and-for-itself (spirit). The Idea/God has become other and then recovered itself through its otherness. We arrive at the same punctuality that was there at the beginning, but now it has mediated itself through its otherness. It is now a universal singular, the One that is All, the *hen kai pan* of Hegel's Tübingen days with Hölderlin and Schelling.

In the Jena aphorism we have been looking at, Hegel describes the Idea's movement of self-othering in nature and its subsequent self-recovery through the destruction of that otherness, as "the life-course of God". The metaphorical presentation allows us to grasp the essential fact that the relationship between thought and nature is one of process,[69] one that can only be understood in terms of the dynamic, systematic movement Hegel calls science, articulated by logic, nature and a reconciling third term, spirit. This dynamic relationship is captured in the expression *Lebenslauf*, the life-course Hegel finds in the Absolute Idea. This circular movement implies and indeed requires a

scientific or systematic perspective. However, on the other hand, this systematic viewpoint requires protagonistic human content that is thoroughly integral to the action of the Absolute Idea, and not merely within the confines of the *Phenomenology*. In our aphorism, Hegel refers to this human standpoint as the "second cycle of the absolute".

This is the point of view of the individual thinker or, more generally, of human thought thinking nature. Specifically, within Hegel's encyclopedic system, it is the work of the natural scientist. From this point of view, what appeared as the "wrath" of the Idea negating natural otherness in the fiery crucible of thought, is incarnated in the actual human quest for knowledge. It is only through this activity that the negativity of the Idea is directed against its otherness. Reciprocally, the individual scientist's hunger for knowledge can be grasped as the personified "wrath" of the Idea. In fact, this is how individual scientific effort should be seen, as a process where, as Hegel writes in the same passage, the individual literally loses himself in the quest for knowledge, although like nature itself, the individual is reborn, as "second nature" in spirit.[70] According to my reading, Hegel grasps the natural sciences in a systematic way, through a meta-enquiry that does exactly what a true *philosophy* of nature must do. It must go beyond the specific investigations of the particular natural sciences and enquire into the ontological status of both the scientific object itself and the knowing subject. Above all, it must enquire into the relation between the two, i.e. between thought and nature. This shows that the speculative, systematic thought of Hegelian science is only what it is insofar as it has content to consider (*überdenken*), content that is supplied by the particular, natural sciences. I believe this is what Hegel means when he writes, "It is not enough that

philosophy corresponds with the experience of nature, but the origin and the formation of philosophical science has as a presupposition and a condition, empirical physics."[71]

The question of the otherness of nature with regard to thought can only be grasped within a system that is a dynamic process. This is why attempts to understand the Hegelian relationship between thought and nature in static terms, for example, in terms of correspondence, fail.[72] By presenting nature as the self-othering of the Absolute Idea, the system presupposes itself as *Wissenschaft*, or presupposes the possibility of knowing all of nature, of the Idea recovering its lost punctuality. However, this "life-course" of the Idea is only possible through the agency of human thought thinking nature. In other words, the otherness of nature with regard to thought only obtains with regard to human knowing, or with regard to spirit. Without this human agency, there is no question of natural otherness as opposed to thought, just as there would be no system and no science within which the question could be meaningful. Consequently, we can say that the systematically necessary otherness of nature is *for us*, knowing subjects but only to the extent we can say the activity of our knowing participates in the systematic movement of the Absolute Idea.[73]

When Hegel looked out at the fearful dissymmetry of the night sky, the nauseating multiplicity of the Milky Way, he was looking at nature in its undigested, unmediated form, in a form of radical otherness to thought. In this light, the bitterness of his comment, calling the night sky a gleaming leprosy, reflects, on a human scale, the wrath of the Idea faced with what is still to be known, what has still to pass through the fiery crucible of thought. The fact that there remains nature to be thought, that there is still chaos outside the system, implies an openness to the future. Indeed, from Hegel's

notion of science as an absolute process reconciling thought and nature through human agency, a further implication arises: the possibility of an open system. This solves the problem we witnessed in other attempts to come to grips with the otherness of nature within the system, which I qualified as Fichtean or Spinozist. The possibility of an open system, conceived as recovering natural otherness into itself, while remaining open to further otherness outside itself, allows for nature to be both part of the system and outside the system, where this contradiction, rather than being static, powers the process itself. In fact, this dynamic view of the *Lebenslauf* of the Idea sees natural otherness in temporal terms, in terms of the historical process that is the actual human history of the natural sciences. As a temporal process, it also implies the possibility (the necessity) of a future. This is another way of saying that the completion of the system is presupposed and indeed intuited from the absolute point of view (it is always already complete from a logical point of view) but open with regard to the "second cycle of the absolute", the human, historical process of knowing.

The view of system as process I am describing must not be collapsed into the "processional" view I mentioned at the outset, where nature and logic are seen as somehow simply obeying the same dialectical three-step. We now understand that if both *the Philosophy of Nature* and the *Logics* run along dialectical lines, it is not because nature is somehow pre-programmed to follow these laws. Rather, it is because the *Philosophy of Nature* represents what obtains after the otherness of nature, dispersed in the infinite multitude of things (*Dingen*), has already been *thought*, i.e. negated, liquefied, digested and reborn as the representations, in fact, as the *discourse* of the natural sciences within the activity of spirit. This is how Yorick's skull fits in.

3. Yorick's skull or what form does natural otherness take within the system?

The reference to Hamlet's graveyard scene comes from Hegel's *Phenomenology*:

> "One can have many thoughts about a skull, as with Hamlet and Yorick's, but the skull-bone itself is such an indifferent, natural thing, that nothing else is to be directly seen in it […] than simply the bone itself."[74]

I believe this passage provides us with a vivid illustration of what happens to raw nature when it passes through the crucible of determining, negating, human thought, to be reborn in a spiritualized form and as such, ready to be taken into the system of science. Briefly put, it allows us to see how this spiritualized form of nature is essentially discourse. Only as such can it become a content of Hegel's discursive system of science.

While the *Phenomenology* is usually recognized as one of the great books in the history of philosophy, even by sober-minded analytic philosophers, most readers are puzzled and dismayed when they come upon, in the chapter on Observing Reason, a lengthy discussion of phrenology, in which the philosopher takes a great deal of trouble to demonstrate the specious nature of this pseudo-science. True, at the time, phrenology was, through the writings of Lavater and Gall, fairly well regarded as a science of nature but surely the great philosopher should have recognized the quack nature of phrenology and not even bothered with it! In protesting against phrenology, Hegel doth seem to protest too much. In other words, the fact that Hegel seems to take phrenology seriously enough to spend valuable pages refuting its axioms merely reinforces the belief that his philosophy of nature is just as dated and wrong-headed as the object of his reflections.

In fact, what Hegel objects to in his discussion of phrenology, is the belief that the contingent objects of nature are in themselves meaningful.[75] The idea that the shapes and configurations of a skull immediately signify something that only needs to be

deciphered is simply wrong. Its bumps and contours have no inherent significance. As a purely natural form, it does not tell us anything. It is not, as Hegel writes, "a speaking movement".[76] It is only when "thinking is taken as active with regard to objects" that we get beyond the "infinite mass of singular shapes and appearances" that "nature offers us".[77]

Still within the linguistic terms Hegel employs in the passage, the skull-bone is not a meaningful sign that points to something or represents something. Rather, we might say, it is an empty, arbitrary signifier or what Hegel calls elsewhere, a "name" as opposed to a meaningful word.[78] What is important to grasp for our discussion is that, as an empty signifier, the "name" has the same status as any arbitrary, natural object. As an interchangeable token, the signifier is a naturally formed entity, i.e. its present form is the result of a perfectly contingent chain of causes and effects, the same way a pebble has become what it is through centuries of *usage,* as expressed in the dual French meanings of "wearing away" and "use". As Hegel writes, "Names as such [are] external, senseless entities [...]"[79] The skull-bone is such an entity. It is an "immediate being that does not even have the value of a sign".[80] In order to signify something, it must first be "worked up by intelligence",[81] negated in the crucible of thought, in order to be reborn as a meaningful *word* in a discursive context. To say this another way, the skull-bone is only a content of science to the extent that it has been negated by thought and reborn in spirit. This takes the form of words.[82]

As a purely natural object, the skull-bone is an empty signifier waiting to be transformed by thought and given meaning. This is precisely Hegel's point. Yorick's skull-bone is, in itself, a meaningless natural object. It remains so until it is taken up and

apostrophized by the character Hamlet. What was formerly a purely natural, contingent object/signifier is thus negated and transformed into a meaningful word within a famous discourse. It is now a "speaking movement".

In fact, Yorick's skull is not just part of Hamlet's discourse but part of a Shakespearean tragedy and as such, part of the discourse of great art. In Hegelian terms, we could say that Yorick's skull-bone is now spiritualized to the extent that it is part of world literature. We might even argue that Yorick's skull-bone is reborn in the highest, most spiritualized form, to the extent that the artistic discourse of which it is part is itself incorporated into the discourse of Hegelian science. In this way, the image of Hamlet apostrophizing Yorick's skull enables us to see how an inherently meaningless bone becomes scientifically meaningful, not as a natural thing, but only as a signifier that has been transformed in the crucible of thought and reborn as *logos*. Here, there is no longer an arbitrary link between signified and signifier. The things of nature are the potential words of scientific discourse, but only insofar as they die as "names" and are reborn as the words of science.[83]

Of course, Yorick's skull, as *artistic* discourse, is not meant to be part of the philosophy of nature. However, the same reasoning applies within the philosophy of nature itself, to the extent that its content is not nature itself, but nature as discourse, nature that has already been negated and spiritualized, reborn as the significant shadow of its former self. This discourse is the representational language of the natural sciences, which perform the same negating/preserving/uplifting operation on natural objects that Hamlet does on Yorick's skull-bone. And just as this natural object does not completely disappear but is taken up into the systematic discourse of Hamlet, so raw nature becomes

part of the systematic discourse of Hegelian science, in that it reads and thinks, speculatively, the texts of the natural sciences. In other words, Hegel's philosophy of nature does not observe nature, it reads texts. This is why it is full of references to the natural sciences of his day. The discourses of these sciences, their representations, are the *stuff* of the philosophy of nature and it is in this *spiritual* content that nature itself comes to be an integral part of the system.[84]

The role of representative thought; the activity of the natural sciences, is described very clearly in the addition to EN §246. "The more thinking there is in the representations, the more things lose their naturalness, their individuality and immediacy: through the penetrating action of thought, the wealth of infinite many-shaped nature is impoverished, its springtimes die out, its play of colors is drained." It is in this pre-digested form that the philosophy of nature encounters nature. It is thought thinking thought. This is, again, what Hegel means when he writes, in the body of the same section, "[P]hilosophical science has as a presupposition and a condition empirical physics", but only if we take empirical physics for what they are, not animal-like, sensual perceptions of reality, but thought thinking raw nature.

By stating that Hegel's philosophy of nature takes the discourses of the natural sciences as its content, it is important to understand that I am not saying Hegel's science derives or deduces its categories from the results of particular, empirical research. I am saying that the philosophy of nature is speculative, conceptual thought addressing itself to these writings as content. Far from passively accepting this content into itself, Hegelian thought treats the representational content of these discourses as thought always treats its objects: actively and indeed violently. I believe this is how the important addition to EN

§254 should be read, why Hegel maintains it is necessary to "test whether space is appropriate to our thought", by comparing "the *representation* of space with the determination of our concept." In this encounter, which must take place if "our representation" of space is to be proven "necessary", speculative thought risks nothing. It is indeed conceptual, dialectic and "true", regardless of the representations it encounters. But thought must encounter something; it must have a content to actively work on. Otherwise, if the categories of the philosophy of nature were completely independent of content, why would they bother discussing "space" and "time" at all? Why not simply remain in the sphere of such abstract categories as "self-externality"?[85] As I hope to have convincingly argued, however, the content of speculative thought is not the sensuous intuitions of raw, undigested nature. If it were, "animals would, in this way, also be physicists".[86]

The mediating action of the natural sciences, grinding the bones of raw nature into the discursive content of the philosophy of nature, does nothing to attenuate the shocking otherness of nature itself. That this otherness continues to exist, in spite of the system's logical conclusion (*Schluss*) is proof of the dynamic meaning of identity-in-difference, of speculative thought. In fact, this painful otherness is the condition for any thinking activity at all. In other words, it is only because there *is* natural difference that there is anything for humans to think. The "gleaming leprosy in the sky" represents the radical, scandalous otherness of nature. It is the chaos outside the system. It represents all that is still left to be thought, all that remains to be said, and perhaps ultimately, for the aging philosopher looking out the window at the night sky, all that will have to go unsaid.

Concluding unscientific postscriptum:

When we consider Hegel's account of the Absolute Idea and its dispersal in nature, it is hard not to be reminded of certain elements found in contemporary Big-Bang cosmology theory. The chances of anyone involved in the mathematically based physics of today's cosmology considering Hegel relevant are extremely slim and I am equally sure most Hegel scholars will find such an encounter anachronistic and jejune. Still, I want to consider some of the general concepts of Big-Bang theory in light of Hegel's science. In doing so, I am attempting an example of what I have been claiming Hegel does: I am thinking speculatively the representations of contemporary, positive science.

Singularity: Big-Bang theory postulates the existence of a singularity, out of which the universe exploded, inflated and expanded into its current state. Depending on whom you talk to, the universe will either continue to expand or collapse back onto itself (Big Crunch) into a black hole, leaving once again a singularity.[87] Accounts of the Big Bang tend to look backwards towards the beginning or origin of the universe and therefore toward the original singularity. Most accounts begin in the macrocosmic realm, governed by the theory of relativity and then move back in time. This move back is also, inevitably, a move to the microcosmic realm, governed by the strange principles of quantum physics. As we approach the original singularity, it is generally agreed that the "laws" of physics "break down", to use the words found in most vulgar accounts of this state. Although physics attempts to look further back toward the beginning, creating super-dense matter in particle accelerators, in the belief it will one day find the laws that govern matter at such high densities, the original singularity remains beyond all accounts. There is nothing more to say about it than what can truthfully be said about the

Pamenidian One: it is. The reason for this is simply that if the singularity is the beginning, it makes no sense to enquire into the physical conditions or causes that gave rise to it and which might explain it, otherwise the conditions or causes would precede the singularity, which would therefore no longer be the beginning. So Big-Bang theory must simply begin with the singularity as an axiom. This is another way of saying, physics can never tell us "why" the Big-Bang occurred.

We can certainly adopt the Heideggerian approach, here, and simply recognize that what is at stake is the question of being, and dwell within it: why is there something rather than nothing? We can also take the ineffability of the singularity as an esoteric expression of divine agency. Faced with the question of being, even serious cosmologists like Stephen Hawking, whose famous *Brief History of Time* ends with the word "God", cannot resist indulging in naive metaphysics (as I cannot resist indulging in naive cosmology). However, if we look at the singularity in Hegelian terms, as the punctuality of the Idea, perhaps we can find something meaningful to say about it.

The punctuality of the Absolute Idea arises at the end of the *Logics*. The *Logics* present the articulations of thought as it thinks objectivity as becoming more and more subjective and then thinks subjectivity (or itself) as increasingly objective. The culmination is the absolute identity between objectivity and subjectivity, between reason and being, between thought and being. Here, in such an explosive identity, reason can be nothing other than *raison d'être*. I expressed this, above, in terms of the ontological argument: essence is so full of itself, it must spill over into existence. As Hegel would express it, the Concept cannot not be, so it is. It is, *because* it is, with the "because"

representing the reason it *is*. Being has every reason to be and so, *is*. How does this pertain to the Big Bang?

If the cosmological singularity is the absolute beginning, if it can have no cause outside itself, then it also must have its own reason within it. Its principle of sufficient reason (the principle by which, in Leibniz, things are brought into existence) must be within itself. The singularity must be both reason and being or thought and being, as identical.[88] If the singularity is its own reason to be, then it must be. As well, it must *be* absolutely or universally, since it is absolute. There is only one original singularity per universe (I am not counting other entities called "singularities" that are postulated and indirectly "observed" in black hole astrophysics) and so the being of that singularity will also be universal, as will its *raison d'être*.

Contemporary cosmology also postulates a black hole type singularity at the Big Crunch, not in the past but in the future. This ultimate singularity would happen following the collapse of all matter, energy or entropy into what could only be described as the ultimate black hole, one resulting from the gravitational collapse of the entire universe. Of course, this future singularity must be the same as the past singularity. "Both" are absolute and there is only room for one absolute. In other words, there cannot be two absolute singularities, unless we are talking about more than one universe, which I am not considering. Similarly, we might also say that true singularities are always the same *one* since there is nothing in them to predicate any difference. Consequently, the future singularity is the same as the past singularity and must therefore also be the identity of thought and being. This might explain a problem some contemporary cosmologists raise: the missing information. According to the Big Crunch scenario, the

ultimate, universal black hole absorbs all entropy and information within it and then, when there is nothing else to absorb, evaporates. The question is, what happens to all the missing information, all the perceivable, understandable, graspable quanta of the universe? An Hegelian might answer that it subsists as thought, the universal thought we see compressed in the punctuality of the Absolute Idea. It would be, once again, absolute *raison d'être* or essence so full of itself ("that, than which nothing bigger can be conceived," as Anselm said) that it could not help but spill over into existence.

Anthropic principle. In order to explain some of the observable phenomena that seem to throw certain aspects of the Big Bang theory into doubt, *some* cosmologists have come up with the anthropic principle.[89] In its "strong" form, the principle says the universe is the way it is, e.g. relatively smooth and flat, because otherwise we would not be around to perceive, understand or grasp it. Indeed, if the universe were any different, the physical conditions for our existence would be absent and we would not be able to ask the question of being. Hence, the universe is the way it is, because we are here to think it.

Stated this way, the anthropic principle resonates with Hegel's notion of natural otherness, as I presented it above. For one thing, the principle recognizes the universe as a process and tells us that there is a necessary correlation between the way it is and our ability to think it. Only in a very specific space/time, outside the singularity, is it possible for humans to think the universe. Hegel would define this state as one where nature appears in its otherness to human thought. Only in such a state can nature offer itself up as an object for thought *and* only in such a state is human thought possible. If there is no natural difference, there is no (human) thought and if there is no thought, there is no

natural difference. However, while the anthropic principle tends to see human thought and consciousness as a very small window in the general opacity of the universal process, Hegel sees our agency as constitutive of spirit and as such, constitutive of the Absolute Idea's (self-)consciousness, a process that necessarily involves the Idea distinguishing itself with regard to the otherness of nature and then coming to see itself in nature by negating it through (human) thought. If we apply Hegel's life-course of the Idea in a cosmological context, if we see the expanded universe as a moment of difference between thought and nature, where the Absolute (singularity) has reached a point where it can reflect on itself as what it is not, then we arrive at the conclusion that the universe is (self)conscious. However, if we accept that, we have once again proven the existence of God. For what else could such a thing be?

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NOTES

[1] Speculative or scientific truth in the Hegelian sense is the identity of identity and difference. It may be presented either intuitively, “in a common form, brought close to the representation, imagination or the heart, for example, about nature, we speak of... God’s son abandoned into temporality, the world etc.”, or scientifically, “in the form of the concept”. Letter-report to Niethammer, *Werke in 20 Bänden* vol.4, Moldenhauer and Michel eds. (Frankfurt am Main: Suhrkamp, 1970) p.415. See also Hegel’s reference to Jakob Böhme in the Preface to the Second Edition of the *Encyclopedia, Werke in 20 Bänden* vol. 8, p.28.

[2] The problematic nature of this relationship and its polemical interpretations are evident in the recent issue of the *Owl of Minerva* (34.1 – fall/winter 2003) dedicated to the topic.

[3] On the completeness of the system, see *Encyclopedia Logic*, (EL) §§14, 15. Edward Halper puts the problem this way: “[A] comprehensive system seems to undermine itself: either it includes everything and there is nothing beyond it to explain, or it explains everything and there *is*, thus, something beyond that it does not include.” “The Idealism of Hegel’s System”, *Owl of Minerva* 34.1 (fall/winter 2003), p.20.

[4] Heinrich Heine, *Sämmtliche Werke* vol. 14 (1862), pp. 275 – 82. Quoted in Walter Kaufmann, *Hegel: A Reinterpretation* (New York: Anchor Books, 1966), pp. 366-7. I realize this account does not enjoy the same textual status as something Hegel actually wrote or a comment he made in the lecture hall. The Hegelian attitude toward nature which I believe it reveals will be further witnessed in other, more academic, although less evocative references.

[5] Writers and editors on the question often begin with this type of disclaimer, e.g. Stephen Houlgate, editor of the collection of essays, *Hegel and the Philosophy of Nature* (Albany: State University of New York Press, 1998) begins his introduction by stating, "G.W.F. Hegel's Philosophy of Nature... has long been the object of ridicule and disdain". p. xi. I have included a summary bibliography on Hegel's Philosophy of Nature.

[6] I mean "theory" as we might find it defined in contemporary philosophy of science: a series of axioms and propositions that are tested (falsified), by experiment, as hypotheses.

[7] Alain Lacroix points out how Hegel's reservations regarding Newton are partly based on his "mathematical formalism" which Hegel saw as adding nothing new to the discoveries of Galileo and Kepler. *Hegel, La philosophie de la nature* (Paris: Presses Universitaire de France, 1997), pp. 79-99.

[8] Maker gives a number of examples of this line of interpretation in his important article, "The Very Idea of the Idea of Nature", in Houlgate, *Hegel and the Philosophy of Nature*, p. 21, note 3. His examples are drawn from Charles Taylor, Errol Harris, Michael Rosen, and R.G. Collingwood. In fact, Hegel explicitly rejects the idea of nature itself progressing logically, in an evolutionary way. "It was a clumsy representation of the ancient and even the new philosophy of nature to consider the development and the

passage from one natural form and sphere to a superior form and sphere as a real, exterior product..."EN §247R. In his article "Idealism and Autonomy", *Owl of Minerva* 34.1, p.60, Maker describes the processional view as claiming, "nature and spirit *are* the Idea." He opposes this view to an equally erroneous Kantian approach, where, "logical categories are applied to an independent given reality as form to content..." Ibid. Maker claims that Hegel's position is an *Aufhebung* of these two extremes, a position he calls "methodological idealism", where the system acknowledges "the existence of a domain which is ontologically distinct from the system as a system of thought." Ibid., p.61.

[9] In the words of Louis Althusser, "Jean Hyppolite decisively proved that Hegel's conception of history had nothing to do with any anthropology..." "Lenin Before Hegel", *Lenin and Philosophy and other Essays*, translated by Ben Brewster (New York: Monthly Review Press, 2001).

[10] Fredereck Engels, *Dialectics of Nature*, translated by Clemens Dutt (New York: International Publishers, 1963).

[11] Maker puts it this way: "How can a philosophy that... claims to generate its own determinations from within nonetheless attend to the worlds of nature and spirit as found beyond the system?" "Idealism and Autonomy", p.60. Cf Halper's formulation of the question above, in note 3.

[12] In his review of the book, Jere Paul O'Neill Surber summarizes these different directions, as they are represented in Houlgate's *Hegel and the Philosophy of Nature*. *Owl of Minerva* 33:1 (fall/winter 2001-02) pp. 119-124.

[13] A good example is Alison Stone's article, "Hegel's Philosophy of Nature: Overcoming the Division Between Thought and Matter", where we find that, "A few scholars have

attempted to reconstruct Hegel's overall view of natural development, but without recognizing his basic account of nature's progressive unification of thought and matter." *Dialogue* 29/4 (fall 2000) p. 741 note 2.

[14] Hegel explicitly rejects this conception in EN §247R, and in texts where his distinguishes his own views from those of Schelling. For example in EL §23Addition (hereafter, Z).

[15] Many of the commentators I refer to do this. Natural contingency simply falls outside the province of the philosophy of nature, which deals only with that part of nature that adheres to the concept. Stephen Houlgate claims there is a "distinctive logic of nature" by which "certain natural processes are made necessary..." as opposed to "contingencies in nature that only empirical science can discover." "Logic and Nature in Hegel's Philosophy: A response to John W. Burbidge", *Owl of Minerva* 34.1, p. 107. In the same issue, Will Dudley writes, "The necessary contingency of natural beings and the intrinsic limits to systematic conceptual determinacy, mean that the correspondence between experience and philosophy will always be imperfect." "Systematic Philosophy and Idealism" p. 99. I am arguing for a more dynamic relation between natural contingency and the philosophy of nature, one that is mediated by the natural sciences.

[16] The fact that Hegel recognizes that nature is contingent does not, in itself, refute the processional view. One can argue that Hegel recognizes the double aspect of nature, as both logical and chaotic, when he writes of nature's impotence, the fact that it is incapable of adhering to the concept and always lapsing into contingency. *Encyclopedia Philosophy of Nature* (EN) §250. The fact that Hegel himself would have to decide what

is contingent and what is necessary would refer back to the arbitrary nature of the whole construction, jeopardizing any claim to objectivity.

[17] *Werke in 20 Bänden* vol.6, pp. 202-207.

[18] As Hegel writes in EN §248: "In nature, not only does the play of forms manifest an unruly, unbridled capriciousness, but as well, each form in itself is devoid of its own concept." In EL145Z, he writes, "This richness [of nature] as such [...] is of no higher rational interest and it only gives rise in us, in the great variegated diversity of its inorganic and organic formations, to an intuition of contingency, losing itself in indeterminacy." In EL §21Z, Hegel refers specifically to the stars: "We see the stars, today here, tomorrow there; this disorder is something inappropriate [*ein Unangemessenes*] to spirit, something not to be trusted..." Hegel's feeling, or lack thereof, for natural wonders is starkly captured in the diary of his trip through the alps, where he describes the glaciers as "filthy" and the mountains themselves as "eternally dead masses [that] gave me nothing but the monotonous and at length boring notion: this is how it is [*es ist so*]..." In Kaufman, pp.307-309. Hegel's feeling for nature is perhaps akin to the protagonist's epiphany when he experiences the nauseating presence of the tree root under his park bench, in Sartre's *Nausea*.

[19] This idea of degree does not do violence to Hegel's own conception of nature, which, relative to the Idea, should be grasped as "a system of degrees [*Stufen*]". EN §249.

[20] "The Very Idea of the Idea of Nature, or Why Hegel Is Not an Idealist" in Houlgate, *Hegel and the Philosophy of Nature*, p. 4. In his article "Chemism and Chemistry", John Burbidge presents the sides of the debate in a similar fashion, grouping Halper, Winfield and Wandschneider together at one pole, as those for whom "philosophy of nature and

philosophy of spirit are simply extensions of logic...” as opposed to Maker, for whom “nature is a domain that is radically other than systematic thought.” “The Very Idea...”, *Owl of Minerva* 34.1, p.4. I am saying these interpretations are more nuanced than a simple opposition and can rather be seen as a spectrum of interpretations between two extreme positions. In placing Maker at the extreme, I am perhaps doing him an injustice, since he sees himself as mediating between the extremes of metaphysical idealism and a Kantian approach, where “logical categories are applied to an independent given reality as form to content...” “Idealism and Autonomy”, p.60. However, a truly Kantian position, postulating natural objectivity as an unknowable thing-in-itself, would fall outside the spectrum of Hegelian interpretations. In other words, if we take “independent given reality” as *relative* to the Idea, we are back within the positions I am considering. In fact, we are at Maker’s position.

[21] Ibid.

[22] “Idealism and Autonomy” p.66

[23] Maker, “The Very Idea...”, p.11.

[24] This view is challenged by Ardis Collins in “Hegel’s Unresolved Contradiction: Experience, Philosophy and the Irrationality of Nature”, *Dialogue* 39/4, pp. 771-96. Like Maker, however, she sees the otherness of nature as necessarily inherent within the system.

[25] Burbidge makes the important distinction between the object as *Gegenstand* of consciousness in the *Phenomenology* and the *Objektivität* of the logic. I am saying, however, that *Objektivität* is the *Gegenstand* of the Idea, conscious of itself. “Chemism and Chemistry” p.16.

[26] This notion of the logic or the Idea-in-itself as the absolute subject is perhaps also implicit in Richard Dien Winfield's reference to logic's autonomy with regard to natural determinacy. "To uphold the autonomy of reason, without which dogmatic presuppositions cannot be overcome, empirical content can only be admitted into the systematic conception of nature by being detached from its origins and incorporated into the self-constitution of the concepts of nature and spirit". "Objectivity in Logic and Nature", *Owl of Minerva* 34.1, p.89. In the final paragraph of the *Encyclopedia*, Hegel refers explicitly to the "subjective activity of the Idea", EG (*Philosophy of Spirit*) §577.

[27] Collins p.789.

[28] Burbidge, "Chemism and Chemistry" p.13.

[29] Burbidge, "Chemism..." p.4.

[30] Winfield, "Objectivity in Logic and Nature", *Owl of Minerva* 34.1, p.89

[31] Winfield, "Objectivity in Logic and Nature", p.89. Or, the "sequence of logical categories is determined by their own content..." p.88.

[32] Maker, "Idealism..." p.61

[33] Winfield, "Objectivity..." p.89.

[34] This seems akin to the position Hegel describes as "acosmism", referring to the Spinozist tendency to paint over worldly contingency. EL §50R.

[35] Stephen Houlgate is processionalist when he writes of a "distinctive a priori logic that is immanent in nature itself." "Logic and Nature in Hegel's Philosophy: A Response to John W. Burbidge", p.109.

[36] "If reason is to conceive nature systematically, three hurdles must be conquered: First, Nature must be determined without appealing to anything assumed to be given in reality

[...] Secondly, nature must not be conceived by appealing to given frameworks of reference [...] or any other structures of cognition that reputedly determine what nature must be to count as an object of knowledge. Thirdly [...] the philosophy of nature must still somehow provide categories of nature that go beyond the ideal self-identity of logic's thinking of thought [...]" "Space, Time and Matter: Conceiving Nature Without Foundations" in Houlgate, *Hegel and the Philosophy of Nature*, pp. 51-52.

[37] Ibid, p.53.

[38] Winfield, "Objectivity...", p.89.

[39] Thus, at the beginning of the logic, Being is presented, using the passive voice, as that in which "there is nothing *to be thought*". In "Nothing", Hegel refers explicitly to the external perspective of scientific thinking: "Nothing is in *our* intuiting or thinking..." (my emphasis) *Wissenschaft der Logik, Das Sein* (1812), Hans-Jürgen Gawoll ed. (Hamburg: Felix Meiner, 1986) pp.47-48. The fact that we participate in this movement is what makes Hegel's "demonstration" so compelling.

[40] By outside, I mean before, after and above. As well as coming "after" the *Phenomenology*, the logic as "pure science" (Ibid. p.35) and therefore the entire system, must be presupposed for the dialectical movement in the *Phenomenology* to take place. Science does indeed reflect upon its phenomenological coming-to-be, but it also must be presupposed as the completed system, otherwise the *Phenomenology* would recount an endless series of figures of knowing and would thus dissolve into relativism and skepticism, looking a lot like Kuhn's theory of scientific revolutions.

[41] *Werke in 20 Bänden*, vol.3, pp.79-80.

[42] Ibid.

[43] Using the Introduction to the *Phenomenology* as justification for this systematic perspective is pertinent, since it was originally written as the introduction to the whole system. However, even the logic presents scientific thought thinking content, to the extent this content is thought-determinations. The content of the Objective Logic (Being and Essence) is thought thinking itself thinking objectivity, while the content of Subjective Logic (Concept) is thought thinking itself thinking itself. Thought-determinations are the objective content of logic: "This objective thinking is indeed the content of pure science." *Wissenschaft der Logik, Das Sein* (1812), Hans-Jürgen Gawoll ed., p.16. This perspective is explicit in such expressions as "for thought" [*für das Denken*], for example, toward the end of the Absolute Idea, *Werke in 20 Bänden* p. 562, or, unequivocally, in EL §50: "It is for thinking, and for thinking alone, that the essence, the substance, the universal might, and purposive determination of the world exist [*ist*]." (*The Encyclopedia Logic*, translated by T.F. Geraets, W.A. Suchting and H.S. Harris (Indianapolis: Hackett, 1991) p.95 (translation slightly altered).

[44] In EL §23Z Hegel distinguishes his own conception of the relation between thought and nature from Schelling's. For Schelling, thought is immediately "petrified" in nature, while for Hegel, in dealing with nature, we are dealing with "thought-determinations", a kind of second nature that has been determined by human thinking. Although they overcome the "antithesis between subjective and objective (in their usual sense [i.e. in the sense we witness in the *Phenomenology*])", thought-determinations are the objective content of speculative (Hegelian) thought, which is "subjective" in the absolute, scientific sense of expressing the thinking activity of the Idea. EG §577 ("the Idea's subjective

activity"). If we accept Hegel's God as the representation of the Idea, we might add, EN §247Z.

[45] Hegel may have adopted this vocabulary from Schiller, who refers to each one-sided aspect of the holistic truth (either through intuition or through understanding) as barbarous or savage, in his *Letters on the Esthetic Education of Mankind*. See Letter 4 where Schiller uses the synonym *Wilder* to describe a state where feeling dominates principles, and *Barbar* where reasoning is dominant. Hegel seems to use "barbarian" terms for either unilateral position. Thus, Hegel writes in another Jena aphorism (#46): "Remaining in intuition is barbarous, e.g. Jakob Böhme,..." *Werke in 20 Bänden*, vol.2, p.551. On the other hand, remaining fixed in the unilateral use of the understanding's principles is equally barbarous, as we see in Hegel's essay on skepticism, where he refers to "that barbarity that consists in attributing an irrefutable certitude and truth to facts of consciousness", where "the understanding is raised to absolute status". *Werke in 20 Bänden* vol.2, p.250.

[46] Hegel plays on the words "zufällig" (contingent) and "ein Fallendes" (the fallen) referring to the purely natural world, in his remark to EL§50.

[47] *Leçons on the History of Philosophy, Werke in 20 Bänden* vol. 18, p.100. See also EL §82Z

[48] *Werke in 20 Bänden*, vol.2, p.552. (#49) For a published English translation, see Michael Hoffheimer, "G.W.F. Hegel – Fragment on the Life-Course of God", *Clio*, 12:4, 1983, pp.401-409. For a French translation, *Notes et Fragments*, translation and comments by C. Colliot-Thelene, G. Jarczyk, J.-F. Kervegan et al., (Paris : Aubier, 1991), p.63.

[49] William Maker describes the "sheer for-ness" of nature, "as capable of subsisting in this determinacy without reference to anything else." Maker, p. 12.

[50] *Encyclopedia* §244. "The absolute freedom of the Idea is, however, that it [...] decides in the absolute truth of itself [...] to freely let itself go out of itself as nature." We find a similar articulation at the end of the *Greater Logic*, where the Idea's punctuality is expressed as "the absolutely unique". *Werke in 20 Bänden* vol.6, p.573. In the Jena aphorism we are discussing, "frei entlassen" is expressed as "Gott, zur Natur geworden, hat sich ausgebrietet [...]" Jean-François Marquet in his course on Hegel at the Université de Paris IV-Sorbonne (1992), translated *frei entlassen*, only somewhat ironically, as "unbuckling", evoking the image of a fat god having eaten too much, letting his belt out. In fact, this idea relates easily to the ontological argument. The Idea/God's essence is so "full" that it must let itself go into existence.

[51] In our aphorism, Hegel uses the term *Lebenslauf Gottes* the life-course of God. In the *Lessons on the Philosophy of Religion*, we find: "It is the absolute freedom of the Idea that, in its determining [and] judgment, lets go of the other as something free and independent. This other, let go and independent, is nothing less than the world." *Werke in 20 Bänden* vol. 17, p.243. See EG §577, where Hegel writes of the Idea's "judgment" (Sich-Urteilen) or "division" of itself into "two apparitions": nature and spirit.

[52] EN §247Z. This addition goes on to describe the Idea's self-othering as (*als*) nature, using some of the mythical or religious images we find in Böhme: e.g. nature is described as the Son of God, let go into the world and then taken up again. In his remark to the following section, Hegel describes nature as the "fall" from the Idea, which is more in line with the Lucifer image in our aphorism. Together, the two images reflect the

ambiguous nature of nature, as both the Idea/God (Jesus) and radically other from the Idea/God (Lucifer). I would also like to add that Hegel's question, or the question of *frei entlassen* is *the* Judeo-Christian theological question: If God is perfect, why bother to create something as imperfect as the world?

[53] Braun's article, p. 60, in *Hegel – L'esprit objectif, l'unité de l'histoire, actes du 2e congrès de l'association internationale pour l'étude de la philosophie de Hegel*, 1968, pp. 51-64. Braun wants to save Hegel from Schelling's later critique which found the notion of the Idea deciding, out of boredom, to create nature, ridiculous. I think we have to take the expression Hegel actually uses, "sich entschliesst", in the quasi–etymological sense of "de- (*ent*-)" and "syllogize (*schliessen*)". This explains what Hegel means when he refers to the Idea's free letting go of "its moment of particularity". EL §244. The moment of particularity has been taken up within the syllogism, as the *essential* middle term between the universal and the individual. Now, particularity becomes de-syllogized (in the sense we might say, de-fenestrated) in order to become nature. Geraets, Suchting and Harris translate "sich entschliesst" as "resolves". I think "decides" is better, in that it captures the idea of breaking or cutting off, as in "de-cision".

[54] WL, *Werke in 20 Bänden* vol.6, p.573.

[55] Regarding this notion of the Idea's self-predication into existence, we must turn to Hegel's ontological grasp of judgment. I refer again to EG §577, where the Idea's self-judgment produces nature and spirit. In EL §219, Hegel refers again to the "judgment of the concept" as a free "sich entlassen" of "objectivity as an independent totality... an inorganic nature he is faced with". Ontologically, judgment, within the system of science, should be understood as a predicative proposition *(Satz*), where existence is

posited (*gesetzt*) in the copula. EL §171. In EL §166, Hegel writes, regarding the judgment, "The copula 'is' comes from the nature of the concept, to be identical with itself in its externalization". Toward the end of the WL we find, "This moment of judgment, both synthetic and analytic, by which the universal of the beginning determines itself, from itself, as the other of itself, must be called the dialectic." *Werke in 20 Bänden* vol.6, p.557. In the *Philosophy of Religion*, we find that "the absolute judgment" is "God differentiating himself from himself, eternally producing himself as his Son." *Werke in 20 Bänden* vol. 17, p.223. See ibid., p.437, on God predicating his existence in the copula. Edward Halper refers to this idea of predication without seeing the ontological weight this carries in Hegel, i.e. where "subject" must be understood as both grammatical and psychical.

[56] Kant makes this distinction in paragraph 77 of the *Critique of the Faculty of Judgment*, where he refers to the monstrous possibility of an "intuitive understanding", i.e. one that produces its own natural content. I know some Hegel commentators find it difficult to accept such assertions as mine, seeming to equate the Idea with God. For example, Houlgate claims the Idea's "decision" to let itself go into nature is really a metaphor and that "one needs to exercise caution... when reading Hegel's famous claim that the logic is the exposition of God as he is in his eternal essence before the creation of nature and finite mind." Houlgate, "Logic and Nature", pp.111-112. I do not want to belabor the point, but it seems difficult to ignore such texts as the one Houlgate himself quotes, as well as others, like the addition to §EN247 which explicates the Idea's self-othering as (*als*) nature, in terms of God's "subjectivity, activity and infinite actuality." I believe, in Hegel, God must be accepted as a fully philosophical (speculative) concept, expressing

the Idea's absolute subjectivity, activity, infinite actuality and indeed, self-consciousness, through its taking itself as an object or grasping itself as another, a necessary condition for *any* sort of self-consciousness.

[57] "[I]t is the self-consciousness of God that knows Himself in human knowledge." *Philosophy of Religion*, "Lessons on the Proofs of the Existence of God", *Werke in 20 Bänden*, vol.17, p. 385. At the beginning of the Philosophie of Spirit, EG §381Z, we find spirit described as, "the actual [*wirkliche*] Idea in the self-knowing of itself".

[58] Wandschneider, "Das Problem der Entäusserung der Idee zur Natur bei Hegel", *Hegel-Jahrbuch*, 1990, pp. 25-33.

[59] Ibid. p.30.

[60] *Werke in 20 Bänden* vol. 17, p.243.

[61] EN §250.

[62] Wandschneider, p.31. Another version of this view, that solves the problem of natural otherness by refusing the *otherness* of nature, by partitioning the contingency of nature from what is logically immanent in it, can be found in Louk Fleischhacker's "Gibt es etwas Ausser der Ausserlichkeit? Über die Bedeutung der Veräusserlichung der Idee", *Hegel-Jahrbuch*, 1990, pp.35-41. This exclusion of contingency can also be found in Houlgate's account, where "there are contingencies in nature that only empirical science can discover" and which have no influence on "the distinctive logic of nature". Houlgate, "Logic...", p.107. For Dudley, as well, "the system... excludes those contingencies that exceed the determinacy of the concept." Dudley, "Systematic..." p.101. I am arguing that while there is always contingency outside the system, rather than excluding it, thought seeks relentlessly to negate and incorporate it, at first through the natural sciences.

[63] For example, already in Hegel's *Differenzschrift*, we find that in Fichte, "the viewpoint which posits nature as living disappears; for its essence, its in-itself, are said to be nothing but a limit, a negation." *Werke in 20 Bänden* vol.2, p.79.

[64] "Unangemessenheit" EN §248R.

[65] Böhme refers to Lucifer in his cosmogony in *Von der Menschwerdung Jesu Christi*, I, Chapter 5, §11.

[66] Hegel refers to nature in terms of the fall in EN §248R. This hybrid quality of nature is also reflected in Hegel's reference to it as the "son of God", as I mentioned above. EN§247Z. This hybrid aspect also reflects nature's impotence, the fact that if follows some "laws" but always falls into contingency. Briefly, insofar as nature represents the possibility of being "crucified" and reborn as spirit, it can be seen as Jesus Christ. However, in its recalcitrant and scandalous otherness, it is Lucifer. Hegel points out that Böhme himself represents nature as both. *Werke in 20 Bänden*, vol. 17, p. 244 – 251.

[67] *Werke in 20 Bänden*, vol.2, p.552. (#49)

[68] Ibid. Hegel also refers to the negativity of thought as purifying immediate worldly content and raising it to the universal, in EL §50.

[69] "als den Prozess der *subjektiven* Tätigkeit der Idee" EG §577.

[70] See Adriaan Peperzak's "Second Nature: Place and Significance of Objective Spirit in Hegel's Encyclopedia", *Owl of Minerva*, 27, 1 (Fall 1995) pp. 51-66.

[71] EN §246R. This insistence on content derived from the positive sciences is particularly evident in Hegel's writings on education. In his letter-report to Niethammer, Hegel writes that "philosophy is nonetheless a systematic complex of content-rich sciences [*Szientien*]." *Werke in 20 Bänden* vol.4, p.411. In his letter to von Raumer, on philosophy

in the universities, Hegel complains that "the contents of the particular sciences have... not yet received their reworking and adoption into the new idea". Ibid. p.419. A few pages further on, Hegel writes of the "concrete content" supplied by the "positive sciences" and how "the study of these sciences shows itself as necessary for the fundamental insight of philosophy." Ibid., p.423. These pedagogical texts are particularly pertinent since one too often forgets that the ultimate articulation of Hegel's system, the *Encyclopedia*, was conceived as a teaching manual. They also show how, for Hegel, the practice of philosophy, in the university, first requires the painstaking acquisition of representational content, e.g. history, law, religious studies, ancient literature, and *then* subjecting this content to dialectical thought. On the central role of pedagogy in Hegel's philosophy, see my article, "Hegel and the State University", *Owl of Minerva*, 32.1 (fall 2000), pp.5-19.

[72] For example, "... [W]e must then attempt to ascertain the extent to which various empirical phenomena correspond to the determinations that have been articulated." Will Dudley, "Systematic..." p.99.

[73] This idea of human agency is expressed succinctly in the *Philosophy of Religion*: "Nature only comes forward in the relation to man, not *for itself* in the relation to God, for nature is not a knowing thing. God is Spirit; nature knows nothing of Spirit. Nature is created by God but it does not come out of itself in its relation to God, in the sense that it is not knowing. It only is in relation to Man [...]" *Werke in 20 Bänden* vol. 17, p. 248.

[74] *Werke in 20 Bänden*, vol.3, p.251.

[75]Alasdair MacIntyre comes to the same conclusion I do about Hegel's take on phrenology, but from a different perspective. From his ethical interest in Hegel's

writings on phrenology, MacIntyre concludes that we cannot deduce the "aptitudes and conditions" of the human spirit from observations of the natural body. This is because human spirit is the fruit of rational activity and history, which are not manifest in physiology. In other words, natural things, *in themselves*, are inessential or un-reasonable. "Hegel on Faces and Skulls", in *A Collection of Critical Essays*, edited by Alasdair MacIntyre (New York: Anchor Books, 1972) p. 236. The same justification underlies Hegel's rejection of the idea of natural evolution. Cf. EN §249R. Such an idea implies that reason, or the movement of the concept, *reveals itself* within nature. This is Schelling's idea, not Hegel's. Cf. EL §24Z1. For Hegel, the concept is thought. Nature is the opposite until it *has been* thought. See also O. Breidbach, "Hegels Evolutionkritik", *Hegel-Studien* 22 (1987), pp. 165-72.

[76] *Werke in 20 Bänden*, vol.3, p.251. We can apply Hegel's critique of phrenology to the materialistic flavor of contemporary neuroscience, where scientists are continually finding the "seat" of some faculty in the brain, believing that they are thus explaining the thing seated there, e.g. language, love, crime...

[77] EL§21 and the addition. Translation Geraets; Suchting and Harris pp.52-53.

[78] I.e. in the *Encyclopedia*'s discussion of language (§§ 451-464). This section is insightfully commented by John McCumber in *The Company of Words, Hegel, Language and Systematic Philosophy* (Evanston: Northwestern University Press, 1993) pp.220-238. See also my contribution on the subject in "Objective Language and Scientific Truth in Hegel", in the upcoming SUNY publication on Hegel and language.

[79] *Encyclopedia of Philosophical Sciences* §459. *Werke in 20 Bänden* vol. 10, p.274.

[80] *Phenomenology. Werke in 20 Bänden* vol. 3 p. 251. Empty words, pure signifiers or "names" are no more than "stones and coals", writes Hegel, in his letter-report to Niethammer. *Werke in 20 Bänden* vol.4, p.415.

[81] McCumber p. 233.

[82] "The word gives to thoughts their most worthy and true existence." EG §462Z. Or, "With this, we again see language as the existence of Spirit". *Phenomenology. Werke in 20 Bänden* vol. 3, p.478.

[83] I believe Derrida, in his desire to establish a Hegelian semiology, misunderstands the point of Hegel's pyramid analogy: when sign and signified remain separate or linked arbitrarily, then meaning is dead, like the dead mummy entombed in the stone. This relationship is symbolic and ultimately arbitrary and "romantic" and/or primitive. In scientific (speculative) discourse, the signifier *is* the signified, i.e. the meaningful word, which is rather like Derrida's own conception of "différance". "The Pit and the Pyramid: Introduction to Hegel's Semiology*", Margins of Philosophy* (Brighton: Harvester Press, 1982).

[84] John Burbidge, "Hegel on Galvanism", in *Hegel on the Modern World*, ed A. Collins, (Albany: SUNY, 1995) pp. 11-124. Burbidge shows how Hegel chooses Pohl over Berzelius, in EN §330Z, on galvanism. He shows how Hegel was up to date on his readings since we see an evolution in the same reference between the 1817 edition (§249) and the 1830 edition. Hegel chooses Pohl because he "grasps the empirical in its synthesis… the speculative concept." p.118.

[85] EN §254Z.

[86] EN §246Z.

[87] Although the latest data strongly supports the ever-expanding scenario, I will do what Hegel does and consider the account that is more amenable to speculative thought.

[88] This is already implicit in the fact that the Big Bang theory takes the singularity as an axiom; as such it is both a reason and a thing.

[89] A helpful physicist reader of this paper commented that most physicists are "pinning their hopes on something non-anthropic, such as string theory." Again, I am exercising my Hegelian prerogative in choosing the scientific accounts I want to speculate on.