In attempting to provide a functional description of mind, I shall try to steer clear of any orthodox or metaphysical functionalism. Nevertheless, despite its metaphysical slipperiness, contemporary functionalism has contributed invaluable insights regarding the problem of functional analysis. These insights are drawn from the epistemological methods required to study complex systems, particularly nested hierarchical structures where the problem of different scales or levels is of the utmost importance.[10] In tackling the problem of analysing the mind, some of these methods will be adopted in order to develop a more fine-grained paradigm of functional analysis. Before coming back to a more comprehensive description of geist in terms of its function, then, it will be worthwhile to provide some brief comments regarding the kind of functionalism or functional analysis this book draws upon.

FUNCTIONS AND MULTILEVEL STRUCTURAL CONSTRAINTS

To define or analyse the mind in terms of functions is tantamount neither to the elimination of structural or material constraints, nor to a dismissal of such constraints. The mind *is* what it *does* to the extent that there are adequate material-causal and logical-semantic structures that support its activities. This is not to elide the distinction between normative activities and natural structures, reasons and causes, thinking and being, the 'conceptual psyche and the cerebrum',[11] but only to underline the fact

a number of interesting consequences. For example, the observation that the function of item x is y explains or contributes to an explanation of the general proper activity of a system S which includes x. It does not, however, essentially explain the presence of x as such; nor does it essentially have the same properties as the general activity of S.

10 See R. Batterman, *The Tyranny of Scales* (2011), <http://philsci-archive.pitt.edu/8678/1/Bridging.pdf>; for a more technical survey of the problem of scales and hierarchy in relation to complexity, see R. Badii and A. Politi, *Complexity: Hierarchical Structures and Scaling in Physics* (Cambridge: Cambridge University Press, 1999).

11 'The difficulties in the way of a thoroughgoing cerebralism are logical: they rest

that adequate causal-structural constraints need to be in place in order for geistig activities to be realized. In this sense, a functionalist analysis of mind attentive to the question of structural adequacy and constraint as well as that of types and distinctions of structures is the proper method of 'carving at the joints'.[12] It differentiates distinct classes of functions and their uniformities—'as if' functions that describe causal-structural mechanisms and functions proper, which, belonging to the order of reason, signify logico-linguistic roles. Furthermore, it correctly attributes functions to organizing structures which, in their very constraining role, support and afford the realization of mind. In short, an adequate functionalism of mind as a configured and configuring unity must presuppose that a plurality of constituents is required for the constitution of the mind, and that, in addition to this plurality of constituents, there is also a plurality of organized unities—or integrations—of such constituents, each with its own distinct structural constraints which may or may not be interlaced.

For this reason, functional analysis demands a coherentist view that sees a single function in terms of activities that are qualitatively different from the role it appears to be playing. Functions are not a matter of pure abstractions since they are *dimensionally varied* and *multiply constrained.* 'Dimensionally varied' means that a function can only be adequately analysed in terms of the *qualitatively distinct structural constraints* required for its realization—constraints that are distributed across different levels (dimensions) of the functional-structural organization. 'Multiply constrained' means that the specificities of a function are determined by distinct structural levels that *constrain it in particular ways.* The analysis of

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on the difficulty of modelling something that displays remote intentionality in a medium that only displays fully actual, descriptive structures, and in modelling high-level universality, and, more importantly, the everlasting, open retreat to ever higher levels of universality, in a medium that cannot reflect all higher-level affinities and logical properties that are thus implicated.' J.N. Findlay, *Psyche and Cerebrum* (Milwaukee, WI: Marquette University Press, 1972), 24–5.

12 Plato, 'Phaedrus', in *Complete Works* (Indianapolis: Hackett, 1997), 542.

a function as dimensionally varied and multiply constrained is a *realistic* examination of the conditions required for the realization of that function in its specificity. *In principle*, a proper analysis of a function is a blueprint for the realization of that function, and its potential modification via changes in its underlying structural constraints. This is all to say that a description of mind in terms of geistig activities requires a multilevel approach capable of analysing the types and scales of structural constraints (whether physical or sociocultural) that at once afford such activities and specify them. This issue will be discussed in more detail in chapters 2, 3 and 4, under the rubric of a critique of the transcendental structure—the question of what it means to distinguish structures necessary for the realization of mind or thinking from the contingency of their particular transcendental types.

The dimensionally varied and multiply constrained description of a function specified above may be called the *deep picture* of the function. It is *deep* in the sense that it pictures the function as being organized by activities, constraints, and unities at different structural levels or scales. The overall attributes of a function are determined by the interplay of multiple activities that cannot be straightforwardly merged or intuitively added together. The deep picture does not describe a function in terms of how it appears, but instead *explains* how it is organized. It specifies what activities, with what roles, what spatial and temporal organization, and what dependency relations, are required for its realization of a function. The totality of a function is replaced by the hierarchical and multilevel complexity of a functional organization wherein the function is orchestrated by qualitatively different activities, each designated with specific constraints and associated with a distinct structural domain or level.

In contrast to this deep picture of function where there is no one-to-one correspondence between realizer and realized features, what we might call the *flat picture* of function presumes a one-to-one correspondence between realizer and realized, either because the realizer's properties are considered as qualitatively identical to the realized functions, or because the structural levels and their corresponding constraints have been flattened. The flat picture of function can be modelled on the

mathematical concept of function as a transition map between input and output, where the transition can be realized as many pathways mapping an initial state to an output state. On this model, the function implies an unconstrained abstract realization in so far as there is one-to-one correspondence between the realizer and realized features. Function *a* abstractly realizes activity *b* if elements of *a* map onto or are isomorphic with elements of *b*. Here, flatness signifies structural and/or functional isomorphism between the attributes of the realizer and the realized, in so far as there are no constraints associated with distinct levels of structure or activities. Therefore, in the flat picture of function, the causal and/or inferential relations between realizing and realized properties, activities, and functions are context-free and domain-neutral. A specific property or attribute can be realized by any set of entities as long as the abstract mapping holds between them. But this abstract mapping is built on the assumption of an isomorphism between realizers and realizeds. At the structural level, such isomorphism presupposes the absence of distinct structural levels which in distinctive ways constrain and determine the specificity of a particular function and its properties; while at the functional level, it implies that both realizing and realized properties are of the same functional type or class.

This flat or unconstrained picture results in triviality, since any given function can be realized by all manner of entities so long as the abstract mapping between realizer and realizeds is obtained. Anything can be furnished with mind, be it a rock or a piece of 'Swiss cheese'.[13] Functional complexity becomes ubiquitous when any function can be realized by any kind of *stuff*. The functional description of mind, however, requires an account of the integration of distinct processes, activities, and roles both causal and logical. Without a precise account of this integration—how different activities with causal or logical roles are put together and integrated, and how different constraints are satisfied—the description of mind is merely the description of arbitrary stuff. Thinking becomes ubiquitous to the extent

13 H. Putnam, *Philosophical Papers* (2 vols. Cambridge: Cambridge University Press, 1975), vol. 2, 302.

that there are no specific organizing or explanatory constraints for its realization.[14] As we shall see in the following chapters, there are many types of constraints that need to be in place for anything like cognition to be realized; and, as will be discussed in chapter 2, the myth of a superintelligence or an unbounded posthuman intelligence is precisely the product of biases ingrained in the flat or unconstrained picture of function. In other words, such views inexorably forgo the task of explaining what it means to call something intelligence, and describing the exact structural constraints by virtue of which something can be identified as exhibiting intelligent behaviours. In this sense, naturalistic accounts of superintelligence fall into a contradiction: committed to a physicalist account of intelligence and a thesis about an unbounded intelligence, yet unwilling to go through the hard work of identifying the structural and behavioural constraints and taking them seriously.

Moreover, the flattening of structural and functional dimensions and the consequent removal of specific constraints associated with them results in an illicit merger of the organisational hierarchies that underpin cognitive complexity. This illicit merger has significant implications for the models used to analyse and intervene in any system. It makes the issues of realizability, reappropriation, and functional change appear to be already at hand and only a matter of understanding and intervention at the level of immediate cognitive and practical resources, and such an assumption inevitably leads to biased conclusions. For example, if a system S has a global function λ and local realizing properties or functions α_L, β_L, ... necessary for the realization of λ, then according to the flat picture of function, all properties or activities in S are to be regarded as qualitatively identical to what the system does.

It is not difficult to recognize that this is in fact the logic of subsumption: If such-and-such activities are vital to a system's functions, then it must be that these activities are subsumed within the function of the system

14 Interestingly, panpsychism can be described as an implicitly functionalist account of mind, but one with a triviality condition, where the flat picture of function licenses the ubiquity of mind or its unconstrained realization across an expansive continuum.

and therefore represent the qualities or properties of the system's function. By the same token, if what the system is doing is flawed, then in virtue of the functional subsumption entailed in the flat picture, all activities vital to that system must be changed or discarded. For instance, if capitalism has subsumed such and such activities or relations, and if capitalism must be rendered obsolete, then so must these activities and relations. This is an anti-scientific approach that has neither any purchase on reality nor any critical import. Let us expand on this example in comparison with the deep picture of function: capitalism is defined by what it does, its *mode of production*. We cannot think of individuals and the capitalist system in terms of simple part-whole relationships or metaphors about relations between *things* (e.g., grains of sand in the desert, bricks in the wall, etc.) where the particulars of such-and-such qualities can be said to be ontologically subsumed by or to have the characteristics of the whole to which they belong. Particular individuals, or collections of them—classes—are actively included in the capitalist system not in virtue of their living in it or being a part of it, but by virtue of whatever they may do that—in one way or another—counts as conforming to or being involved with capitalism's mode of production. An individual adheres to capitalism if what they do fits the pattern of capitalism's mode of production. In this sense, not every activity or characteristic of an individual or a person is subsumed, shaped, or assimilated by the system to which it contributes or of which it is a part. Even if we take capitalism as the totality of ways of producing and society as what we perceive to be the totality of social relations, they represent two quite distinct types of totality despite their interconnections. To remain oblivious to these seemingly minor specifications is to risk mistaking functions or activities for things, links between the distinct levels of individuals' activities and capitalism's mode of production for metaphysical relations between things.[15]

Confusing activities with things and flattening different levels of activities will without exception result in specious descriptive and prescriptive

15 See for example, R. Lucas, 'Feeding the Infant', in M. Artiach and A. Iles (eds), *What is to be Done Under Real Subsumption* (London: Mute, forthcoming).

conclusions. On the descriptive level, capitalist society will be regarded as a metaphysical totality in which every element (particular individuals, activities, etc.) is by definition *ontologically* subsumed within capitalism. Even concepts and conceptual activities in general will be deemed to be subsumed by its mode of production. But if concepts themselves are absorbed by capitalism, then the very idea of capitalism becomes ineffable. Talking about capitalism and diagnosing its pathologies will then be little more than exercises in producing subjective and arbitrary narratives about something that is, in truth, unintelligible. On the prescriptive level, capitalism will be judged as a matter of all or nothing: either we should by any means possible contribute to it since there is no alternative, or we should seek its total collapse and with it the collapse of all social relations since such relations in their entirety are—supposedly—assimilated by it.

Another variation of such a fallacy is the equivocation between the socially instantiated functions of the mind and social practices in general. According to this erroneous view, if social practices are warped by a system of social relations (let's say reshaped and distorted by capitalism), then powers of reason and judgement, or the structuring functions of the mind, are also tainted by this all-encompassing distortion or corruption. But such a thesis is based on flattening the distinctions between social linguistic practices and social practices in general, act and object, form and content. Linguistic practices are indeed social practices, but their sociality is not general, they are *sui generis* and formal social practices that must be sufficiently differentiated from other social practices. Absent this differentiation, any talk of real or material conditions, and therefore any critique of social relations, is little more than everyday talk which, lacking objectivity, is in every way arbitrary and dogmatically subjective.

Functional analysis and the study of structural complexity should be approached as essentially conjoined programs. Unless both are in place, description and prescription in any form will be untenable, and prospective explanations, interventions, analyses, and critiques will result in dogmatic positions ranging, depending on their contexts, from resigned cynicism to fatalist optimism, from analytic stinginess to speculative overenthusiasm.

In both Kant's account of the conceptualizing mind and Hegel's picture of mind as the object of its own concept or notion, the questions of function and structural complexity—whether at the level of the sensing body or that of the social structure—are intertwined. Hegel's characterization of Spirit (qua organized collection of rational agents or essentially self-conscious creatures) in terms of its functions, and his subsequent analysing of these functions into qualitatively distinct activities and the structures necessary for supporting them, should be regarded as a systematic attempt to uncover the deep functional picture of mind. In attempting to provide this picture, Hegel uncovers hitherto unknown realizers and material organizations, powers and constraints, possible *realizabilities* and functions whose recognition, modification, or augmentation can reshape geist. It is in this sense that we can speak of *the function of functionalism*: A systematic functional analysis of what geist does, its doings, itself turns into a function that reorganizes geist. A functionalist approach to the question of what mind *is* culminates in asking what mind can *become*. The function of the functionalism of mind—the function of the Transcendental—is a thesis already harboured by Hegel's identification of geist (which is what it does) as the object or artefact of its own Concept, an object that is not sensible but is an object of thought, and its unrestricted focus on realizing itself in accordance with its formal reality.

Let us conclude this section with a tangential note on the sensible object (*gegenstand*) and the object of thought (*objekt*) since this distinction will feature throughout the book. Although Kant's use of the terms *gegenstand* and *objekt* is not consistent, in the *Critique of Pure Reason* he uses *gegenstand* to denote a sensible object, an object of appearances or experience (the interplay between concepts and intuition). The German *gegenstand* suggests at least three connotations: *das Gegenüberstehende* or that which stands in front of me (phenomenal manifestation), that which is opposed to me (vs. subject) and that which *stands* or lasts as a product of the faculties of imagination and understanding (perceptual persistence). In this sense, *gegenstand* (sensible object) adheres to the limits of understanding and intuition. *Objekt*, on the other hand, is defined as an object that is explicitly *for* knowledge or thought—that is to say, one that is expressed

by the *determinate* relation of given representations to an object or *objekt* in the concept of which the manifold of intuitions are integrated and united. The *objekt* can be associated with the Latin *objectivum*, which simultaneously implies the real and the ideal, being and structure. This already convoluted distinction is further complicated by Hegel's use of *gegenstand*, which he contrasts to the *objekt* (the *real* object as the dual or correlative of the subject), and characterizes in terms of actuality or trueness (as in an objective fact) and impartiality (i.e., obeying impersonal rules as opposed to the subject's whims). This owes mainly to the fact that Hegel's account of experience (and of an object of experience) differs from Kant's. Therefore, Hegel's *gegenstand* is an object made concrete. It is the object of knowledge and self-consciousness, whereas the *objekt* is a system of real objects held together by inference, judgement, and the concept (e.g., the Milky Way as comprised of stars and planets).

To avoid further confusion, I have abided by the Kantian distinction between *gegenstand* and *objekt*. Hegel's *gegenstand* will be characterized as an *objekt*, and *gegenstände* reserved only for ordinary sensible objects of experience or appearances (items in the world that manifest in perspectival terms and according to perceptual invariances).

FUNCTIONAL INTEGRATION: PHASES OF GEIST

What makes Hegel's picture of geist a significant contribution not only to the history of functionalism and philosophy of mind but also, intriguingly, to the history of artificial general intelligence, is that it presents a social model of general intelligence, one in which sociality is a formal condition for the realization of cognitive abilities that would be unrealizable by individual agents alone. By agents here I simply mean *de facto* causal-structural systems capable of sensing and of effecting rudimentary actions, not agency in a Kantian-Hegelian sense (where it is precisely inseparable from its geistig sociality). But, as will be argued, this sociality is first and foremost a formal space upon which familiar collective sociality is built—a sociality afforded by *language* not as a medium of communication and public discourse, but as a semantic space within which computation and logic converge. At this

point, the equation of general intelligence with geist may appear egregiously hasty. Even though this equation will be fleshed out throughout the book, for now we can understand general intelligence not merely as a bundle of intelligent behaviours, but as a unified intellect distinct from any particular set of such behaviours. In this sense, the 'generality' of general intelligence signifies a qualitative—rather than quantitative—space in which all of its behaviours and activities are caught up.

In analogy to geist, general intelligence is introduced in this book by way of three principal attributes: necessary abilities, the intrinsic social frame of these abilities, and their qualitative integration into a generative framework through which, in addition to becoming capable of recognizing itself, intelligence can inquire into and modify its conditions of realization and enablement. But what principally distinguishes general intelligence from quantitative 'problem-solving' intelligence is the fact that general intelligence is the product of a qualitative integration of capacities or faculties that might otherwise be quantitative when taken individually. How is it that the qualitative integration of certain otherwise non-special capacities and features can amount to a set of special and necessary abilities? This is a question that is as much about the realization of geist as it is about the artificial realization of general intelligence. The question of functional integration, however, becomes particularly thorny since these capacities and features are realized by different causal and logical conditions, distributed across distinct structural hierarchies and functional classes. To this extent, the realization of geist or general intelligence is not a matter of finding and developing a special realizer, a master key. It is a problem of the qualitative integration of abilities and their realizers in such a way that geistig intelligence not only recognizes itself and its abilities, but also becomes capable of modifying its very conditions of realization.

Hegel's curious account of geist, however, defines it not only in terms of an integral and qualitatively distinct set of activities, but also in terms of *phases of integration*. Mind is constituted not only by the organizing unities of its constituents, but also by its passing through different unities of itself. These unities are outcomes of the principal attributes of mind, which enable

it not only to recognize itself, but also to recognize itself in the world and to realize itself according to this recognition. What was mere consciousness is now a formally instantiated self-consciousness, what was only a socially and historically mediated self-consciousness is now historical consciousness, and what was historical knowledge (*Wissen*) of consciousness has been reintegrated into a necessary and pure science (*Wissenschaft*) of the world-history of which it was conscious—an absolute knowing in which Spirit sees itself through the intelligible unity of the objective world in its otherness and thought in its formal autonomy:

> The concept (*Begriff*) of pure science and its deduction is therefore presupposed in the present work in so far as the *Phenomenology of Spirit* is nothing other than that deduction. Absolute knowledge is the *truth* of all the modes of consciousness because, as the course of the *Phenomenology* brought out, it is only in absolute knowledge that the separation of the *subject matter* from the *certainty of itself* is completely resolved: truth has become equal to certainty and this certainty to truth.[16]

However, the actualization of these unities or integrations is neither given nor certain. Self-consciousness, once attained, may be lost; or it may never be fully realized. All unities of mind—which constitute mind as such—are fragile. It is in this sense that geist is not a *deus ex machina*: its realization requires that a certain struggle take shape in the form of a necessary relation between intelligence and the intelligible (not merely theoretical or ontological, but also practical and axiological intelligibility). Nevertheless, this notion of a struggle for the unities of mind remains a fruitless quest and an unintelligible toil unless we posit a Science of Logic through which intelligence sees itself in terms of a regulative and necessary form conceived *from nowhere and nowhen*. This necessary form is what we might call the Hegelian transcendental operator, which, in contrast to Kant's idea of the transcendental method, is decoupled from the conservatism of particular

16 G.W.F. Hegel, *The Science of Logic*, tr. G. Di Giovanni (Cambridge: Cambridge University Press, 2010), 29.

and contingent experiences—experiences that have not yet been fully suspended in the self-experience of the Absolute. It is the logical excess of the Transcendental that crafts intelligence, initiates and regulates the mind's strivings for new unities, and sets the mind into a permanent state of alienation where 'the Spirit *is* at home'.[17] And it is the same excess that retroactively reveals to thought reality in its radical otherness. We shall return to the notion of transcendental excess in the final chapter under the aegis of that most radical and dangerous thesis of all philosophies: Plato's idea of the Good and the craft of a good life.

As new unities of the mind evolve, previous unities can only be viewed from the perspective of later and more encompassing unities. In light of the later unity, the supposed immediacy of each previous unity of mind turns out to be mediated. The unity of consciousness can only be recognized through the unity of self-consciousness, just as historical consciousness can only be analysed from the vantage point of absolute knowing. Where the Phenomenology of Spirit ends, absolute knowing, or the Science of Logic, begins. And where absolute knowing begins, the science of what mind *necessarily* and *actually* is, in its intelligible unity with the world in its radical otherness, comes into view:[18]

> Thus consciousness, on its forward path from the immediacy with which it began, is led back to the absolute knowledge that is its innermost truth. This truth, the ground, is then also that from which the original first proceeds, the same first which at the beginning came on the scene as something immediate.[19]

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17 Ibid., 109.

18 'The necessary is an actual; as such it is immediate, groundless; but it equally has its actuality through an other or in its ground and is at the same time the positedness of this ground and its reflection into itself; the possibility of the necessary is a sublated one'. Ibid., 481.

19 Ibid., 49.

By shifting from one unity to another, from one mode of integration to a more encompassing one, geist recognizes its conditions of realization. In recognizing the conditions of its realization, it becomes capable of modifying those conditions and thus of modifying its own realization—but not until it has recognized its intelligible unity as a part of a more integral unity, namely the intelligible unity of mind and world. By recognizing what is universal and necessary about itself, mind becomes capable of revising the transcendental types or structures it previously deemed to be universal and necessary for the realisation of its abilities or cognitions. And in revising these transcendental types or structures, it moves from one qualitative level of abilities to another, from one mode of integration to another. In this manner, geist suspends that which previously seemed necessary for it—but was in reality contingent—in what is absolutely necessary and universal for it.

These different levels of integration reflect the fact that there are different qualities of geist. Each mode of integration indicates a qualitative shift in the structure of general intelligence. Phases of Spirit are defined by these modes of integration, by how cognitive and practical abilities are systematically incorporated within new unities of consciousness, and by the way in which each mode is represented and established as a normative model (the Concept) for the formation of new attitudes, subjectivities, and institutions for its constitutive agents. What is essential for the qualitative transformation of intelligence are not simply modes of integration qua unities, but also the manners in which these unities are concretely established as models for the conduct and cognitive cultivation of those agents that constitute geist and are encompassed by it. While modes of integration effect a qualitative transformation in the structure of geistig intelligence, their recognition as theoretical and practical models provides agents with access to the intelligibility of this structural transformation. In concretely and determinately recognizing the universal and necessary conditions of its realization, intelligence is enabled to realize itself under a new and higher unity. And in its constant striving to bring itself under a higher unity, intelligence becomes conscious of what the realization of intelligence, in itself and within objective reality, consists in:

> Life, the 'I', spirit, absolute concept, are not universals only as higher genera, but are rather concretes whose determinacies are also not mere species or lower genera but determinacies which, in their reality, are self-contained and self-complete. Of course, life, the 'I', finite spirit, are also only determinate concepts. To this extent, however, they find their resolution in a universal which, as the truly absolute concept, is to be grasped as the idea of infinite spirit—the spirit whose posited being is the infinite, transparent reality in which it contemplates its creation and, in this creation, itself.[20]

To summarize, the integration of necessary qualitative abilities (unities) of mind has two outcomes. On the one hand, it results in transitions in the qualitative form of a geist that always recognizes itself in the world from the viewpoint of its higher functional unity. On the other hand, it occasions the possibility of bringing this qualitative form into a conception—that is, forming a concept or *formal model* of it by means of which agents can recognize or become aware of it and track its transformations within their own collective structure. This serves as a cognitive and practical model by which agents can recognize their abilities and constraints, and act on the conditions of their realization so as to modify or reconstitute them. In this sense, integrations set up a dynamic link between intelligence and intelligibility, between the conditions required for the realization of intelligence and the recognition or awareness of such conditions. The intelligibility of those faculties that constitute the structure of agency and the recognition of the necessary conditions for their realization are then established as premises for functional change and further transformation in the structure of the agency.

This constructive spiral between intelligence and intelligibility expresses the logic of self-reference that is the constructive kernel of geist. As will be argued below, this logic is specific to a distinct species of selves: selves with sapient consciousness—that is, consciousnesses capable of conceiving through the form of self-consciousness. But this is not self-consciousness

20 Ibid., 533.

as an intentional awareness of a self at once observing and observable, a phenomenological self-consciousness; nor is it the self's introspective-reflexive knowledge of itself. It is a logical form through which the self only recognizes what it is for itself from the perspective of a posited infinity—that is, an unrestricted intelligible world—which in its explanatory otherness renders intelligible what that consciousness is in itself, in its intelligible unity.[21] In doing so, self-consciousness establishes the truth of itself and the unrestricted world:

> Consciousness of an other, of an object as such, is indeed itself necessarily self-consciousness, being-reflected into itself, consciousness of its own self in its otherness. The necessary advance from the previous shapes of consciousness, to which their truth was a thing, that is, was something other than themselves, expresses precisely the following. Not merely is consciousness of things only possible for a self-consciousness; rather, it is this self-consciousness alone which is the truth of those shapes. However, this truth is on hand merely for us and not yet for consciousness. Self-consciousness has first come to be for itself but not yet as unity with consciousness itself.[22]

Through the logic of self-relation as the form of self-consciousness, mind attains the ability to treat itself as an artefact of its own concept. It artificializes itself, conceiving itself from the viewpoint of an unrestricted world that belongs to no particular where or when. In other words, through self-relation as the formal condition of self-consciousness, mind is now able to investigate the conditions required for its realization, to adapt to ends and purposes that are not given in advance, and to explore the possibility of its realization in types of structures other than those that naturally constitute it.

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21 'Appearance, that is, the play of forces, already exhibits infinity itself, but infinity first freely emerges as explanation. When infinity is finally an object for consciousness, and consciousness is aware of it as what it is, then consciousness is self-consciousness.' Hegel, *Phenomenology of Spirit*, §163.

22 Ibid., §164.

The history of this kind of self—the minding self—is, then, strictly speaking, a project of *artificialization* in the above sense.

SELF-RELATION: A FUNCTION IN PROGRESS

Self-relation is a defeasible and disequilibrial constructive process. It is a process whereby geist utilizes the intelligibility of its structural transformations (its history) as a model for conceiving itself from the standpoint of a reality that is in excess of it. Not only are geist's actions informed by this model, they also exhibit it. The positive freedom of geist—the freedom to do something—is an expression of this self-relation, which is that of *formal* autonomy. In its simplest and most embryonic form this self-relation is the trivial tautology 'I am I'[23] ($I{=}I$). But in positing this very tautology, geist comes to the realization that the accomplished individuality that it takes itself to be is in fact an ongoing process of individuation from the perspective of that which is *not* this I: the other I, and reality in its radical otherness. That is to say, the positing of self-consciousness as formal—as abstracted from any particular or substantive content—enables what is conscious to be conscious of itself only in so far as some other object mediates its 'immediate' relation to itself.

Self-relation should not be understood in terms of what it appears to be—that is, an immediate relation to the self that is taken for granted, or a mere acknowledgement of oneself as living and as being the subject of desires that satisfy the needs of the species. Instead, it should be understood in terms of what it does, its ramifications: Self-relation begins with a negation of objects and the outside world, but this very negation also brings the self-conscious subject head-to-head with a resisting reality that is not passive, where objects impose constraints upon both thoughts and actions. The consequence of self-relatedness is that it forces the subject to project outward, to be conscious of a reality which is not an extension of the self but an order in which objects negate back, rendering the thoughts of the subject defeasible (prone to revision) and its actions challengeable,

23 Ibid., §167.

or open to possibilities that are not given in advance within the order of self-serving desires or the needs of the species.

Even though self-relation begins with a trivial premise—I am I—its consequences are by no means trivial. They are in excess of such a premise: When a life form negates the outside world in favour of its own interests, it also opens up a new vista wherein reality becomes intelligible as that which is not in conformity with the desires of the life form and, indeed, actively resists them. And where reality becomes intelligible as an active constraining order, self-consciousness is defined not as a phenomenon serving the needs or interests of the species, but as an adaptation to an intelligible reality which outstrips species-related interests and needs qua premises of self-relatedness. The medium of this adaptation is the order of reason, which can be loosely characterized as a system of essentially revisable thoughts and challengeable actions, i.e., thoughts and actions enabled by the constraints imposed by reality in its otherness. To characterize self-consciousness in terms of the *necessary* internal relations between thinking, action, and the constraints imposed by reality is to distinguish it above all as a formally represented order in the sense that all thoughts and actions representing it also conform to the manner by which it orders them not per accident but per necessity. This manner of ordering is first exhibited in the formal-abstract unity of thoughts and actions—i.e., in the way in which first-person thoughts and intentional actions are internally related—and subsequently in the formal-concrete unity of thinking self and material reality, I and not-I, first-person and second-person thoughts.

The acts of an essentially self-conscious creature fall under a formally represented order in which thoughts explain or cause actions, and actions not only fall under their respective thoughts but also exhibit them. The questions of what to do and what to think always arise in response to this order, just as this formal and general order *explains* the thoughts and actions of a subject that falls under it. It is in this sense that thoughts and actions are bound to the question of justification: Do these acts and thoughts reveal or justify the *causality* (i.e., the explanans) *of self-conscious thoughts*?[24]

24 See S. Rödl, *Self-Consciousness* (Cambridge, MA: Harvard University Press, 2007), 52.

In so far as the acts of a self-conscious creature essentially fall under the formal causality of thought, and to the extent that the questions of what to do and what to think always arise in response to this general order that explains the actions and thoughts of the self-conscious creature, we can speak of a *normative order of self-consciousness*. This normative order is nothing but the order of reason qua justification.

As an order that both formally represents and is represented by the causality of thought, self-consciousness is precisely that which turns mind into a unifying point or configuring factor. In actualizing what is only a formal self-consciousness (general I-thoughts), geist must posit that which is not-I. Only through the other (not-I) can the self-relation of the particular I-thoughts which seemed immediate to the subject that thought them, but were mediated from the viewpoint of the other, become immediate again. This is actualized self-consciousness. The self-positing of mind as the unifying point is a formal condition required for the positing and recognizing of reality in its otherness. It is the configuring factor that makes possible the intelligible unity of mind and reality as both distinct and coextensively configured:

> [T]he uniting bond, the configuring factor, is not only—somehow—omnipresent, it not only encompasses and contains all the united elements, but it also has a quite determinate directedness, indeed one emerging from the point from which the unifying is accomplished and by which the elements are made possible and borne. This unifying bond or configuring factor—the unifying point—is a basic concept; in a specific sense it is a primitive concept. More precisely, it is an absolutely singular, unique concept that can be articulated only on the basis of a concrete and penetrating analysis of the phenomenon 'experience of personal unity.' [...] In what, more precisely, does this unifying point consist? It articulates itself by saying 'I.' The I must not be hypostasized as substance or anything of the sort; it would also be fully insufficient philosophically to interpret or understand the I solely on the basis of linguistic configurations within which

> the word 'I' appears. The task is instead that of comprehending the I ontologically.[25]

However, in order for the intelligible unity of mind and reality (the autonomy of thought and the alien thing) to be concretely realized, in order for self-consciousness to establish the determinate truth of itself, it must become conscious of itself from a second-person viewpoint—that of a reality that is in excess of thought and yet is still intelligible. The formal autonomy of thought accordingly demands stepping into the open and conceiving self-consciousness from the viewpoint of a reality that is wholly other to it.

Once a minimal and formal self-relation is established, it opens up a gap between mind and world. Only by bridging this gap from the other extremity—that is, from what is now outside of the manifest identity of the I—can mind become concretely self-conscious. This is the labour of negation, where there is no direct access between mind and reality, between one I and another, but where contact can only be obtained through the hard work of conception. Through the labour of negation, what was a formally trivial identity relation (the monad of $I=I$) is now an identity map ($I=I^*$) where I^* is the self or mind from the perspective of an abyss, an unrestricted world or reality that is to be rendered intelligible. The intelligibility of I or self-conscious mind rests on the intelligibility of the abyss which is, properly speaking, something to be achieved, an objective striving. Intelligence only turns into intelligence when it loses its passivity, when it actively begins to render reality intelligible and, in so doing, begins to re-engineer the reality of itself.[26]

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25 Puntel, *Structure and Being*, 275.

26 'For, in the first place, the monad is a determinate representation of its only implicit totality; as a certain degree of development and positedness of its representation of the world, it is determinate; but since it is a self-enclosed totality, it is also indifferent to this determinateness and is, therefore, not its own determinateness but a determinateness posited through another object. In second place, it is an immediate in general, for it is supposed to be just a mirroring; its self-reference is