Science, Thought and Nature:
Hegel's Completion of Kant's Idealism

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Abstract

Focusing on Hegel's engagement with Kant's theoretical philosophy, the paper shows the merits of its characterisation as "completion". The broader aim is to offer a fresh perspective on familiar historical arguments and on contemporary discussions of philosophical naturalism by examining the distinctive combination of idealism and naturalism that motivates the priority both authors accord to the topics of testability of philosophical claims and of the nature of the relation between philosophy and the natural science. Linking these topics is a question about how the demands of unification—imposed internally, relative to conceptions of the proper conduct of philosophical enquiry—can accommodate realism, a key element in establishing disciplinary parity between philosophy and the natural sciences. The distance that ultimately marks Kant's and Hegel's answers to this question justifies the interpretative claim about completion, while the conceptual patterns exemplified in the posing of the question and in their shared assumptions about its philosophical importance justifies the reconstructive claim about "idealist naturalism".

Keywords: Naturalism, Unification, Realism, Actuality, Regulative and Constitutive ideas, System, Dialectic.

> *I believe that everything that happens*
> *is natural even if we do not*
> *know the cause of it*
> (Sophie to Leibniz, 20/30 October 1691)[1]

1. Introduction: Idealist Naturalism

Characteristic of philosophical naturalism is the aspiration to bring philosophy close to the natural sciences. From a historical perspective, particularly interesting is a set of projects that seek to naturalise philosophy in order to

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[1] Leibniz 2011: 101.

secure its traditional ambitions in synthetic theory construction. The aim is to establish continuity between philosophy and the natural sciences not through methodological convergence or reduction, but by assigning to the natural sciences the role of an external tribunal on substantive philosophical claims.[2] A well-discussed example, which illustrates how such a tribunal might function, uses STR, a scientific theory that does not privilege any frame of reference as giving the real or most fundamental answer. STR counts against the philosophical position of presentism, which states that only what is present exists; natural sciences can be called to adjudicate a philosophical dispute.[3]

The historical positions I want to discuss in this paper share the concern with testing substantive a priori claims—for Kant, left unchecked, pure reason risks stultification by antinomy, for Hegel, thought without proper bounds degenerates to mere abstraction and indeterminateness[4]—yet, instead of turning to natural science for help, they undertake to renew metaphysics, by showing that philosophy is capable of self-testing and has a legitimate claim to disciplinary autonomy.

Without ignoring the force of socio-historical reasons, such as the worldly success and academic prestige of the natural sciences, there is an important theoretical reason that explains the modern move towards science. Functioning as a hidden premise is the Humean thought that reason does not have its own domain. If this is accepted, then one can engage in any number of critical renewals of metaphysics, without seeing a point in defending the disciplinary autonomy of philosophy.[5] The purpose of the paper is to show what happens when this premise is not accepted in conjunction with acceptance of the need for testing philosophical claims and for proximity to the natural sciences. This conceptual space is occupied, I will argue, by Kant and Hegel. This claim does not amount to and does not aspire to be a novel interpretation of their work, it is rather an attempt to cast some familiar arguments in a different light, that cast by the discernibly similar concerns of a group of contemporary naturalists. The main advantage of this way of presenting matters is the broadening of the context of justification of certain idealist theses, beyond the historical one of their gestation and formulation. To emphasise this point I shall refer to "idealist naturalism" as a genus with two species.[6] I introduce below the salient features of the genus by

[2] For a representative range of views that explicitly link meta-philosophical issues, such as those outlined here, with a favoured version of the relation between philosophy and science characteristic of contemporary philosophical naturalism, see Hawley 2006, Maudlin 2007, Papineau 2011. I am not implying that the scientific tribunal is the only tool in the contemporary naturaliser's critical arsenal, but it is prominent among metaphysical naturalisers.

[3] The rejection of presentism does not render the competing position, eternalism, true. For illuminating discussion of this example that highlights the complexities of what I call here, using Kant's metaphor, a "tribunal" see Hawley 2006.

[4] The indeterminacy of bad metaphysics is vividly illustrated in the "Preface" to the *Phenomenology of Spirit* as "the night where all cows are black" (Hegel 2005: 94).

[5] The thought here is that criticism of metaphysics does not amount to its rejection; the point is nicely made in Callender 2011.

[6] Unless otherwise indicated by the context of the discussion and stated explicitly, e.g. footnote 16, I will not be using "naturalism" in any of its bewildering varieties; since I find I am in agreement with those who doubt the usefulness of general applications of the term in philosophy; see M. De Caro's *Introduction* to Putnam 2016.

focusing on a small methodological difference with substantive implications about the nature of the task at hand. This difference marks out decisively the idealist from the contemporary naturalist; simply put, the nature of the continuity between philosophy and the natural sciences gives rise to a first order task, whereas the testing of philosophical claims, without cutting philosophy off from all other disciplines, with analogous claims to adding to our cognitive stock, is a second order task.

(*i*) "Continuity", as I shall use the term from now on, describes a first order philosophical task; philosophy must offer *support* for the work of the natural sciences. Specifically, philosophy must make available to empirical science a realistic account of the relation of thought and nature that does not require supernatural appeal (to a divine epistemic guarantor for example). If philosophy succeeds in this task, the gain is twofold: science is explanatorily self-sufficient and it is informative about things, not about the ideas in the mind.

(*ii*) "Testing" describes a second order task: to ensure that the content of a priori reasoning is sound. The reason that testing is plausibly an internal matter is related to the first order task. On the one hand, the sort of realism sketched as desideratum for the first order task may be unobtainable. So that task may fail. It is, however, a *possible* task for philosophy. This not a historical concession. Rather philosophy can engage in the supportive task *because* the two disciplines belong to the same genus: rationally organised thought. Once this is foregrounded, it is not unreasonable to expect that philosophy will have something to say about the nature of this genus. Asking philosophy to say something about the nature of thought is not outrageous, but does assume a degree of faith in philosophy's own critical tools and methods. Internal testing in turn presupposes a degree of disciplinary autonomy.

But now it should be obvious that the challenge consists in holding (*i*) and (*ii*) together; other things being equal, one has still to establish the downward transition from setting out what is philosophically achievable—the second order task about the nature of thought in general and its implications for sub-species of the genus—to the first order task. The challenge is to show how and why whatever is found to belong to the genus of rationally organised thought has anything to do with the world we found.[7]

2. Kant: Unity and the World

A more prosaic way of saying that philosophical claims answer to a philosophical tribunal is to say that philosophy has its own method, specifically that it has a method that is distinct from those of the natural sciences. The question then arises how can the claims its tribunal vindicates have any bearing on the natural sciences? Kant's answer is that internally tested claims about the fundamental character of rational thought, *whether* such thought is justified a priori or a posteriori, yield results that also have a role in sustaining realism about the relation between thought and nature. I will seek to show what counts in favour of this bold claim by reconstructing first Kant's response to the second order problem about testing and in the following section his defence of realism that addresses continuity.

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[7] I take the phrase, "the world we found", from Sacks 1989.

2.1. Unification as a Goal of Science and of System

Kant solves the problem of testing of philosophical claims by providing a cognitive goal, which names a value that is sought across *all* domains of rationally organised thought that aims to yield cognitive gains. The assumption that there is one such goal is debatable.[8] Contextually, however, the idea that there is a single goal to enquiry that can also function as its guiding value, to which any other values are subordinate, makes sense in light of the goal articulated by Kant's rationalist predecessors, to map in a systematic way asymmetrical ground/grounded relations; attaining this goal enables the enquirer to realise the value of full rational transparency about all phenomena. One important formulation of this epistemic goal presented as a principle that directs enquiry is PSR, the principle of sufficient reason. In some of its stronger interpretations, in Leibniz, PSR motivates the search for a reason that is causally powerful as well as explanatorily complete and given the demandingness of the "why?" question only a supernatural reason that combines creative power and elective rationality can satisfy.[9] One of the results of Kant's testing of philosophical claims is that such reason is unavailable. From an external perspective, that Kant reaches this result is of minor interest, if reaching it requires other commitments that, other positions which consider themselves theoretically less burdened with such traditional expectations; I will consider some of these arguments, to see how Kant's position holds against them.

Kant's solution to the second order problem about testing is to accept the intuitive appeal of PSR but turn the principle on its head. PSR assumes that there is a systematic whole and sets the task of enquiry as tracing the connections that sustain the whole. Kant makes "unification" a goal for thought (*Einheit*).[10] Very generally put, the aim of rationally organised thought is the attainment of unity (see Ak 18:225). The basic function of unity is the identification of a domain of enquiry through general rules that characterise the objects belonging to the domain, concepts that are appropriate for these objects, in the sense that they yield claims that can be adjudicated within the domain and set the standard of epistemic expectations appropriate to the domain.[11] Compared to

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[8] A good reference here is Thomas Kuhn (1977: 330-39), who in attempting to mitigate the impression of his influential theory of scientific revolution, sought to identify objective values, such as accuracy, consistency, simplicity, scope and fruitfulness, which have a good claim in fact to drive cognitive efforts in science, but more important can form a sort of scientific virtue ethics for choice theory. Though Kuhn does not use this terminology, his alertness to the development of each virtue, interpretative nuances and the difficulties of having maximal instances of all in each case suggest sympathy with a virtue-ethicist approach.

[9] By "explanatorily complete", I mean a thesis that connects truth and explanation: given some proposition the true reason that explains it belongs to a whole chain of reasons that even for contingent truths is ultimately a priori and dependent on the divine creative act and choice (see VE II 275-78; Gr 287-91 and GIV 427-63).

[10] *Einheit* of course is "unity". I use "unification" to describe the project of unifying, its conditions, rules and degrees of attainment, that allow the value to be variously realisable. The significance of this will emerge at the end of this section.

[11] To clarify: epistemic expectations are about the nature and strength of the criterion and/or process we use to assess beliefs in the domain (what some epistemologists call "warrant"). Although Kant deals with the more familiar topics in epistemology about opinion, knowledge and belief in the end of the *Critique*, in the third section of the "Can-

PSR, unification adds an extra step of reflection about the *sort* of reason we seek and the sort of object domain in which such a reason *can* explain.[12] Domain specification allows for specific claims to be tested in their appropriate domain, but also most importantly it allows kinds of claims about objects in a domain to be tested in light of the epistemic standard expected and achievable within the domain. This very general account leaves a lot of questions, such as how are unifiers for domains chosen, how are epistemic standards set, whether they are revisable, and so on. I will deal with these larger issues by engaging first with a much narrower application of unification in the domain of science, both to add some detail about the attractions of unification and create a foil for the distinctive features of the Kantian variety.

Kant famously describes science as a "a whole of cognition ordered according to principles" (Kant 2004: 14). This claim anticipates twentieth century arguments in favour of unification presented by Michael Friedman, and subsequently, in a more programmatic fashion, by Philip Kitcher.[13] Friedman sought to recover a non-psychological conception of understanding that tells us what is of value in scientific explanation, namely that it "reduces multiplicity of unexplained, independent phenomena to one" (Friedman 1974: 15). This unification "increases our understanding of the world by reducing the total number of phenomena that we have to accept as ultimate or given" (ibid.).[14] Kitcher (1989) argues that unification can replace available models of explanation, because it reduces fundamental incomprehensibilities and by showing how explanations are parts of sets, it allows connections to be made across regions of the set. So unification encompasses gains we ordinarily value in scientific enquiry: it is generative—"can be used in the derivation of a large numbers of sentences which we

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on of Pure Reason" (A 820/B 848- A 831-B 859) and extensively in his *Lectures on Logic*. So throughout this section "epistemic" will be a reference to the set of issues just specified and not the relation of belief and knowledge or knowledge and truth, although limited mention of these latter topics will become relevant while treating the "epistemic" issues just specified. It is also the case that epistemic issues of that sort have a semantic dimension.

[12] The claim rests on the assumption, which I also attribute to Kant, is that explanation is not the only task reasons fulfill, they also justify, make plausible, make mandatory, make possible, make good until further notice and so on.

[13] Friedman (1974: 8) and Kitcher (1981: 508) trace antecedents in classical work n explanation; that they are also both extensively engaged in Kant scholarship is perhaps not unrelated to their sensitivity to the value of unification. But just a Kantian look at the classical nomological account of explanation would find the latter fatally incomplete. Briefly DN starts from the basic description of scientific tasks as finding answers for "why?" questions that arise about the "phenomena in the world of our experience" (Hempel and Oppenheim 1948: 136), these answers take the form of the discovery—or formulation—of law-like generalisations, which function as major premises in arguments that particular phenomena to count as instances of the law. What is perplexing, from a Kantian perspective, is the assumption that there is a link between major and minor premise. Absent support from a realist conception of a creative divine will, to which Kant's rationalist predecessors were able to appeal, law-like generalisations are *mere* unification devices for a range of different phenomena.

[14] Interestingly, the unifiers that permit this overall reduction of what we accept as brute, need not be intelligible, they render things familiar but may in themselves be "strange" or "unfamiliar"; since what matters are the relations of intelligibility they make possible within and across sets of phenomena.

accept" (1981: 514) and economical, because uses "few patters of arguments" and hence minimizes "the number of types of premises we must take as underived" (1981: 529).[15]

Critics argue that unificationist accounts promulgate a long defunct ideal of systematicity. Nancy Cartwright, for example, argues that the expectation that our knowledge of the world can be held together in one unified whole is dubious; a more fruitful approach that is also truer to actual scientific practice is to embrace local unities (Cartwright 1983: 3-4, and 2000). Accepting the proposal, renders the use of "world" somewhat forced, since all we may speak of is the regions to which our concepts are addressed or perhaps temporal stretches during which our concepts hold. The challenge is explicitly anti-realist and anti-foundationalist. Shorn of the ambition to have non-discursive content as its object, unification continues to play a useful role directed to cognitive practices, by alerting us to look at what holds together the community of enquirers, such as, shared methodology, sets of interests and so on.[16]

Two important points emerge from this anti-unificationist challenge. First, and irrespective of how contemporary unificationists defend their positions, Kant seems vulnerable to the criticism that he is simply in the grip of an obsolete model.[17] However, as I will argue shortly, this picture is back to front: it is the need for testing that drives Kant's unificationist proposal, not some residual attachment to systematicity.

Second, the anti-unificationist arguments cast light in the incipient *antirealism* of contemporary unificationism. It is telling, for example, that, in another paper, Friedman (1997) vindicates a role of philosophy in science as mediator between Carnapian external questions; philosophy provides the concepts that enable communication among different linguistic frameworks, and while these concepts and the theories to which they belong may be transitory and herme-

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[15] "Science uses the same patterns of derivation again and again for different phenomena and in doing so it shows us how to reduce the types of facts we accept as ultimate or brute" (Kitcher 1986: 504). There are both more recent versions of unificationism and some parallels I left unexplored between epistemic and metaphysical aspects of reduction: the ability to place a maximum number of diverse phenomena under a small number that are accepted as brute lends itself to questions about ontological basicness and hierarchy, which are important but not relevant to my argument.

[16] I run together here different projects: Catherine Elgin 1996 and Helen Longino 1998—though they are much closer in their focus on interest than Longino 2001 which emphasises shared method. Elgin develops a Goodmanian argument in favour of a sort of unity that is the system in reflective equilibrium, i.e. a system that is maximally tenable and this is a "worthy epistemic goal" (1996: 99) because it is rationally cohesive ("the elements are reasonable in light of one another", ibid.) and the whole is "reasonable in light of the objectives we originally espoused" (ibid.). Systems in reflective equilibrium "are tethered not to Things in themselves but to our antecedent understanding of and interest in the matters at hand" (1996: 107). Longino 1998 argues for theoretical pluralism and against monist unification, which aims at the resolution of dissension (1998: 197), the local unities she allows reflect dominant theoretical interests at particular times (1998: 230-31). Longino 2001 allows for unity of community of researchers with shared standards and methods of evaluation (2001:148) but remains agnostic about whether their findings form a whole or present as a plurality of non-congruent accounts (2001: 140).

[17] Kant often contrasts "system" and mere "aggregate" (A835/B863) and describes his thought as an architectonic whole, which he then defines this as "the art of systems", where "system" is "the unity of the manifold cognitions under one idea" (A832/B860).

neutically mutable, they occupy that external space intelligibly.[18] Philosophy can treat belief revision in the same way as it can revolution in belief systems, by supplying the tools for classifying them as instances of conceptual transformation, rather than of mere reaction to facts (Friedman 1997: 19). Rational recovery of what can seem arbitrary or merely opaque is essential to securing philosophically another naturalist commitment, which we have not discussed so far, and which comes from Quine's conception of the totality of human knowledge as a vast interconnecting nexus of beliefs from which no belief is immune to revision (Friedman 1997: 7). By incipient antirealism I mean that the defense of the rationality of belief revision and theory choice, more generally, of scientific rationality depends on positing a convergence over time of the different unifying frameworks and so this is an *internal* process of adjustment not convergence to an "entirely independent reality"; all epistemic and semantic claims are framework relative (Friedman 2001: 118). If Kant's unificationism took this form, then it would not be suited to the first order continuity task, which is, programmatically at least, to defend realism.

Although Kant has his own versions of the advantages of unification, especially in passages where he defends the importance of a systematic unity in cognition (e.g. A 645/B673), and applications to other domains of rational thought, what he sees and its contemporary defenders do not, is its *testing* function; its promise as a solution to the second order problem of testing of philosophical claims.

Unification is achieved by a set of rules that set out the object domain for the proper conduct of the enquiry. The rules can be derived from concepts which function to unify the domain, e.g. "objects of experience". As the rules become clear through analysis and argument, the epistemic expectations appropriate to the domain settle. Unification is not a minimalist achievement, since no unifier is self-explanatory and most rules have contrastive applications in other object-domains. Nonetheless having the full theoretical goal in view is not needed for testing: since in most cases philosophical claims fall short because they ignore one or more of the rules that set out the object domain of the enquiry. Testing allows for the systematic demarcation of domains to which philosophical claims can be made and the epistemic force they can carry.

The testing procedure is more vividly illustrated in the negative part of the *Critique*. Rationalist metaphysics seek to provide secure foundation for natural sciences by way of unshakeable propositions about metaphysical facts. Kant's diagnosis in the antinomy is that such facts do not appear to constrain in any way the claims made about them (this is a general thesis following from the Copernican Revolution). The solution is to demarcate the kinds of things that can be said about the objects that belong to the domain. The reflective failure Kant calls "dogmatism" can be remedied through a systematic programme of reflection on what it takes to predicate anything *of* anything, ranging from the most ordinary objects of daily experience, to the most extraordinary ones (e.g. God). Different rules establish different sets of kinds of objects by establishing, through critical argument, the kinds of things that can be said about the objects. The de-

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[18] The role of philosophy I attribute to Friedman here is highly reminiscent of the mediative role Longino 1998 envisages between concurrent localities that are not congruent but also the unification model defended by Gemes 1994 who champions a model of unification that aims at reconciling incompatible claims.

marcation rules or concepts set out the epistemic aims that are permissible within each domain but also the best in epistemic terms that is achievable, namely objective judgements about objects in the domain.[19]

The idea that different rules establish different domains of thought about objects needs further qualification if we are to avoid ending up with a Kantian mosaic. At the same time, if rational demarcation is a priori in the sense of unrevisable, the model is implausibly conservative. The full account, which also shows what is distinctive about Kantian unification requires the following three crucial qualifications:

(1) The unification of the domain of possible objects of experience holds a special role in the project, since it offers us both conditions of objective judgements about such objects but also conditions of reference, and empirical cognition. Although it has all the general characteristics of unification as testing given above, it is also set apart. Terminologically, Kant marks it out by calling the unifying concepts that serve within the domain, *constitutive* of the domain. The special role of this unification is justified, because empirical cognition is of a certain standard, which other putative objects of thought lack. Although this lack has implications about what can be said about such objects, the positive task of reflection and boundary setting continues with the identification of domains in which these objects can have a role though what Kant calls *regulative* ideas.

(2) Regulative concepts or ideas are fascinating because of the great diversity of unifying domains and epistemic tasks they help define. Some regulative concepts are functionally purposeful for the conduct of a specific enquiry; "fundamental power" (A 649/B677) is recommended as one such example. Such *abstracta* help unify specific scientific programmes, by making present—providing a focal point—an item such as "fundamental power" that helps relate empirical findings across the research domain. The fact that fundamental power is not subject to cognitive constraints, and so not a cognition, means that the domain it unifies, while it contains cognitions—claims about specific powers—comes with different epistemic expectations about the warrant of its claims; which is simply to say it is a complex theoretical domain not a set of individually verifiable empirical statements. Other regulative ideas have a wider unifying remit, "world" for example define a domain in which sets of laws apply securing uniformity in their application under the limited warrant of the set unified by "world". The testing element consists in accepting that we have no justification—and none is plausibly forthcoming—for thinking that inductive rules apply.

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[19] In the Anglo-American reception of Kant's thought there is a strong tradition of interpretation focusing on his epistemology, possibly under the influence of interpretative choices by Kemp Smith (see Hanna 2006: 6) but most obviously in the so-called epistemic interpretation of appearances and things in themselves most influentially perhaps defended in Allison 2004 (a revision of the 1983 volume; but see Stang 2018 for a fuller account). What I aim to show is that epistemic concerns, such as the conditions of objectivity, epistemic warrant, and both in a priori specified domains and a posteriori ones (which admittedly Kant does not explicitly tackle except perhaps in the *Anthropology*) are an important part of the critical theoretical project but they are sandwiched so to speak between a foundational layer that aims to establish realism and an upper layer that directs us through a kind of absolute objectivity that is not theoretically available.

Regulative ideas define domains of enquiry and "regulate" the epistemic expectations appropriate for the domain; they establish the degrees of objectivity appropriate for the claims made in the domain. Although Kant treats scientific enquiries briefly here, it seems that the more mature the enquiry, the more populated the domain, the more established the rules employed within it, and so the more "unified" it is. So the greater degree of unification within a domain goes with the collective achievement of objectivity within the domain ("collective" because it is not a matter of a single rule or insight; this view is very close to modern unificationism and even accommodates some of their critics). The testing role of unification with the use of regulative ideas comes from rejection, not just of specific metaphysical theses purporting to communicate facts, but also, an implication of this traditional and orthodox interpretation of the *Critique's* destructive power is the rejection of rational or divine guarantees about the necessity of some domains and its contents, and, more positively and less widely recognized, the possibility of a renewal of metaphysics (across the board). What creates critical friction and tests the regulatively unified domains is that regulative ideas are modally fragile and so conceivably revisable, which means that some may be found to have exhaust their value, if, for example, a claim of a kind that is permissible within the domain creates impermissible conclusions down the line.[20]

(3) Testing by unification is a systematic process of critical reflection, that is suited to the task because it works by engaging with the philosophical claims about objects in order to identify what can be said about such objects. When we move from constitutive to regulative it is not clear how to understand Kant's repeated claims that there is a need for unity emanating from reason itself (e.g. A302/B359). One way to look at this is that there must be a further conception of unification that can guide our efforts at organised rational thought and be testing of such efforts as a whole. So far, all unifiers, constitutive and regulative, come with conditions for their application and domain restrictions. The question is whether a unifier that is free of such limits is conceivable. Kant uses repeatedly a term that specifies what holds objectively without qualification, "the unconditioned" (see B xx-xxi, and esp. A 322-323)—or "absolute" (A 324-6)—but only to chastise reason for seeking to know it. So PSR, which would be the obvious candidate, is already rejected once we take the path of testing by domain demarcation. While Kant withdraws from us the prospect of a theory of all theories, he opens up the possibility of critical reflection about the aims of rationally organised thought and the goals we set in undertaking such thought

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[20] I do not have the space to develop my account of regulative ideas and the unities they make possible in dialogue with existing commentary. With the possible exception of Paul Guyer who connects with unity with the idea of systematic happiness (Guyer 2001: 94), most interpreters give variations of the epistemic interpretation I offer here, though not all agree about the success of Kant's argumentative strategy (Guyer 1997: 42). Philip Kitcher discusses the unificatory role of regulative ideas, as I do here, but also their function as meta-rules for the application of the categories, which implicates them in the constitution of experience, in ways that are deeply problematic as I explain below. Hannah Ginsborg (2017) incorporates regulative ideas and systematicity in an entirely original reading about the conditions of nature as an object of human judgement. My interpretative aim is to show the possibility of aligning narrow and broad cognitive aims (see Massimi 2017) while allowing a non-reductive architectonic between the resulting unities (see Gava 2014).

through what he calls a "cosmopolitan" idea, which relates "all cognition to the essential ends of human reason (*teleologia rationis humanae*)" (A838-39/B866-67). The rule that gives these ends is objective in the requisite sense, i.e. unconditional, because it is the ought contained in the moral law, which specifies the practical ends of reason (A832/B860).

What I tried to show in this section is (*a*) that unification is a procedure for testing theoretical claims in general and philosophical claims in particular; (*b*) that it allows for maximal reflection and reflexivity about a range of specific scientific enquiries, and as a result, it admits of degrees; (*c*) because the different regulative unifying projects can be more or less mature, the model fits the more theoretically developed contemporary unificationist projects; (*d*) unification incorporates reflection on the broader aims of the unifying project itself, which introduces topic-transcendent axiological concerns, about what enquirers should have in view as objective guiding standard, and ultimately about their moral practical identities and the nature of essential human ends; (*e*) finally, and this leads to the topic of the next section, although domain specification is key to unification and the task of testing, the whole edifice is anchored on a conception of experience that sustains empirical realism.

2.2. Realism and Unity

The concepts that unify the domain of possible objects of experience set a high standard of objectivity because of their modal force and scope.[21] They are testing because they function as rules determining a priori what is possible to say about such objects; so classes of claims that fall foul of these rules are ipso facto philosophically adrift. In addition, because they are constitutive, that is, they spell out all the necessary conditions of "one universal experience" (A 110), when they fail to obtain, there are no objects of experience (which is not to say there may not be perceptions).[22] By implication, if something meets these rules of unity (A302/B359), it cannot *fail* to be an object of experience, that is, no additional anti-sceptical arguments are needed to exclude putative simulacra (see A 493/B21). The epistemic status of constitutive concepts clearly surpasses that of regulative ones. Nonetheless, there is no hiding that qua unifiers constitutive and regulative concepts perform the same role: they define the appropriate epistemic expectations for a domain of objects, the domain that is appropriately unified by the said concepts. And they do so after careful critical argument, that is, as part of the process of philosophical thought's self-testing. Crudely: they earn their status and have their role defined by pure reason.

If, as I claimed at the outset, continuity with science, on the idealist naturalist view, requires the defence of realism, it is not clear how the fruits of this essentially internal exercise in reflection and mapping can be of help. In what follows, I will identify a distinctive feature in the unification of the domain of objects of experience, which, allows for a very different style of thought to

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[21] For excellent treatment of this topic see Ameriks 2017.

[22] The parenthetical remark aims to draw attention to the distinction between perceptions, which are subjective, objective perceptions, which are "cognitions" and so, given their conformity a priori to the constitutive rules of the domain for objects of experience, can become items of knowledge that is objective and of objects; this is the basic claim. For discussion of "cognition" see Willaschek and Watkins 2017.

emerge alongside its paradigmatic execution of the epistemic tasks of unification—indeed unification of the domain of objects of experience functions like the steel core in the construction of the theoretical system.

Let us start with considering how constitutive concepts fulfil their epistemic, i.e. domain-defining, functions and how they differ from regulative ones. Consider a regulative concept, "world".[23] When Kant shows that the examination of deductive arguments purporting to state facts about the object thought through this concept, and so to enrich our concept, fails, the critical reader learns that the thought about the object does not constrain one way or another what can be said about it. This discovery affects the concept's unifying function for the domain of natural laws, the expectation of uniformity is a *concessive* rule for scientific research. Consider now a constitutive concept, "substance". When Kant sets out the conditions of its use, he does not examine what facts about the concept can help establish its credentials (this comes much later in his examination of common misuses of the concept). Constitutive concepts or categories are picked up from the table of the most general forms of thought, forms that have general organisational functions and no remit to regulate content (see B 166-67). In order to become constitutive of the domain of the objects of experience, their use must be constrained, and it must be constrained not ad hoc but in accordance with a rule; the constraint that applies as an unexceptional rule is the formal features of the *objects* of the relevant domain, in short, their spatial and temporal form.[24] Space and time are the necessary a priori conditions of all outer and inner experience, they are pure forms of sensibility (e.g. B 66, A 49). These forms set the basic epistemic rules for the domain by directing the use of the concepts that have a claim to constitute the domain (a claim that gets its main defence in the transcendental deduction). Forms of thought about objects of possible experience bear a special relation to the form of their possible objects before even the task of vindicating their applicability to such objects is undertaken. This distinctive feature of unification at this level allows Kant to pursue side by side an epistemic unifying project, which I will outline briefly below, and a project about reference that sustains empirical realism.

First though, some questions about method are in order. Kant has plenty to say about the conscious representation of objects of experience, or "objective perceptions" (A 320/ B 376-77). Why does he avoid talking about the objects of these representational states as intentional, referring and so on, and insists on their dependence on an internal relation of unification in a judgement (e.g. A 79, B 105)?[25] The unity of judgement is just the application of the basic unifying rule for the domain just spelt out, it is a unity of a priori sensible and discursive forms through which alone, as will be shown in the transcendental deduction, objects of experience can be thought. Note: there is no additional argument

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[23] Throughout, I use "concept" to mean thought, concepts in the tradition I consider here are not the same as words, though the distinction is not systematically discussed. But the deep issue that is at stake and becomes especially urgent for Hegel is about thought and things and about the form of thought that is about things.

[24] Kant announces this already in B73, which constrains judgments to spatio-temporal objects, before even tackling transcendental logic.

[25] The question does not depend on an intentionalist interpretation of judgement, such as proposed by Aquila 1983, it raises a conceptual issue, the importance of which is recognised by Kant (see A 320/B376; A 491/B 519).

about what it takes for such thoughts to be about objects of experience; does Kant think there are no general conditions of reference? Or is this a secondary concern?

To understand his method, I think it is important to have in view Kant's possible interlocutors. The task of specifying the domain of objects of experience is undertaken in response to a piece of philosophical inheritance Kant considers a dead-end. To the untutored mind, the experience of objects in one's surrounding environment seems plausibly described as a relation the experiencing subject has with some of those objects; for Kant, the basic realism of this thought is something to be preserved. The philosophical inheritance he wants to undo describes this same relation as a self-relation, because what is given to the subject is, on reflection, some idea or impression, in short, mental content. The experiencing subject has direct access to its mental content; it has no direct access to the worldly objects the content is—presumably—about and is in weak epistemic position with respect to these objects. One of Kant's innovations is to separate epistemic objectivity from reference to real objects, yet address *both* topics with the same tools. Here is the problem he inherits: the experiencing subject can get a criterion for objectivity from the inside, by scanning mental contents to identify qualitative differences. Alighting on features such as clarity or luminosity, which only some mental items possess, proponents of this method claim success in identifying what is suitable for inclusion as basic components in a system of knowledge and candidates for sound premises in an inference that secures reference to extra-mental reality. In recognition of the fragility of their position, they grant a supernatural being the role of mediator or guarantor for the validity of such inferences.

If we see Kant as responding to this piece of philosophical inheritance, the first task is to show that some a priori concepts unify unexceptionally—and without need of further anti-sceptical argument—the domain of objects of experience. Domain specification is part of an argument that aims to show that an a priori and systematic distinction between "subjective" and "objective" is attainable.[26] This argument is given in the deduction: instead of the epistemic subject being engaged in the empirical task of scanning mental contents, it gets the a priori role of unifier of the domain of objects to which concepts apply, and so as the subject of the judgement we mentioned earlier, it is part of the solution to the epistemic problem.[27]

Still the problem of reference remains and is perhaps even more urgent given Kant's entirely a priori answer to the question of what is a possible object of experience. The deduction, and indeed the discussion that follows in subsequent sections about the validity of constitutive concepts, assumes the truth of the

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[26] Note that at this stage, subjective is good enough to stand from what is mind-dependent, dreams, illusions, but also biases indoctrinations, epistemic egoism as Kant puts in it the Anthropology need additional analysis because they are more complex problems ("the idea of a public use of reason" is part of the response).

[27] Strawson folds objective validity and objective reference in stating that the requirement can be satisfied by distinguishing "awareness of objects […] from experiences of them" (Strawson 1966: 24). The source of the problem is the strong anti-sceptical aims Strawson attributes to the argument, for which a thin notion of experience as mere sensory input is acceptable; this leads to a strong transcendental argument of the form [necessarily (a, b)]. Unfortunately the overall strategy leads to irrealism, which is incompatible with Kant's aims.

basic premise of the deduction, which is that a manifold is given to us through the senses.[28] But what is given through the senses is not transparently clear. If it is mental content, as per Kant's predecessors, then the problem of reference is how we can relate it in a principled and systematic way to the objects of experience that causally affect the subject.[29] The epistemic account gives us the form of thought for any putatively objectively referring representations, what is missing is an explanation of how such representations put us in contact with their objects; correct epistemic form needs supplementation with an account that captures even minimally genuine reference.

All we have is assurance of something given throughout senses (which the epistemic criteria presumably will allow us to distinguish from illusions or dream). The given are "representations of the senses" (A 2; see also B1), the contact that pre-philosophically secures reference is through the senses, and Kant give is a philosophical role as the purely sensible content of the representation (see B 129; also earlier B 127). The discussion can get side-tracked at this stage back to epistemic issues about primary and secondary qualities and relational or other knowledge we may have of objects given to us through our senses. But this is not the issue here: it is rather more generally "representation" itself, which while it has a priori form, Kant states, it does not "produce its object as far as its existence is concerned" (B 125, A 93). The question is what within the theory sustains this independence claim, while at the same time securing some contact with the object in terms of such existential independence (otherwise we can have a theory of reference that is too generous and includes even hallucinated objects). The answer, I will argue, is contained in the distinctive feature of unification of objects of experience.

The form of thought for any putatively objectively referring representations, and so judgements about objects of experience, comes down to a rule for correct use of the copula "is" (B 141) or a rule of the "is" of predication in the relevant domain: the use of a priori concepts is restricted through a priori forms of sensibility. Shadowing the "is" of predication is a rule for the "is" of existence for objects of experience: that they have spatial and temporal properties, necessarily. The contact we sought is thus established through the existential interpretation of the "is" of predication. This is to say simply that the spatially and temporally modulated "is" of existence captures the most basic features of empirical object awareness, namely that something is there, now, or that it was there for a period of time in the past, or that it is now further away, or that it was here and that now it is are no more. Note that the ideality of space and time does not affect their role as realist reference markers, since the reference we seek to secure is to

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[28] We know this from the Aesthetic: "The capacity for receiving representation through the mode in which we are affected by objects is entitled sensibility. Objects are given to us by means of sensibility" (A 19, B 33). There is a causal account that describes the "how?" of this relation (see the quote above and A 86, B 118; B 125), but there is outstanding a philosophical account of the general nature of this relation. Ameriks's regressive approach helps highlight this and makes space for the realist interpretation I offer; Ameriks allows a thick notion of experience as truth-evaluable and transcendentally examinable in the form of (a, necessarily b).

[29] The causal relation, while true (read A 19, B 33; A 86, B 118; B 125 and of course plays a role in the "Refutation of Idealism"), is not for Kant the way to deal with either the epistemic (which are ultimately *quid juris?*) or the metaphysical questions posed by objects of experience.

objects of experience which are objects of possible experience.[30] Time and space as realist reference markers align with the untutored belief that our senses put us in contact with objects of experience; that we do not infer them, we are in contact with them. The epistemic and referential "is" work together to give us the a priori conditions to sort out basic first-hand mistakes of experience, provided of course there is some empirical judgment made about the experience.

The advantage of this minimalist realism is that it does not commit to a discussion of the referential properties of empirical representations and what truth-conditions they have. This is a tricky question in any context, but especially in the Kantian in which any obvious option (e.g. isomorphism) would be beyond our capacity to know it (because of our ignorance of things as they are in themselves) and this limitation has traditionally thought to count against realism. Still, something more ought to be said about the content of empirical representations because if, as some quotes suggest, this is just the "raw material" awaiting conceptual form, then the objects we encounter will be just spatio-temporal cyphers.[31]

I will conclude by following a hint given in the claim that empirical representations are *cognitions*.[32] Cognitions are typically representations that are in the form of judgements, so they are conceptualised content. What is philosophically interesting, however, is that "cognition" stands also for the *availability* of sensory cognitive content. The topic of availability is of interest because it asks us to think how such content is about objects. The issue is delicate because the "about" lies between the causal story of our connection to the world (and the proper functioning of the causal channels that are our senses) and the general terms we use to refer to it when we do, that is, the words we use and which allow us to do this not because they are magically connected to the objects they name.

Here is a suggestion for filling that in between space: the senses are causally involved but it is for a task: they are our species-specific information reception

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[30] "Possible experience" is the referential equivalent of the epistemic "possible objects of experience". The role I give the existential copula is compatible with Kant's denial that being is not a real predicate (A 598/ B 626); the existential "is" adds indeed nothing to the concept of the object.

[31] Regarding empirical content see: "the impressions of the senses supplying the first stimulus" (A 86, B 118), Kant also speaks of impressions in the A and B Introductions he talks about the "raw material of sensible impressions". One strong motivation for recent non-conceptualist readings of Kant is the loss of the heterogeneity thesis that is at the heart of his theory; see Allais 2004. However, note that an unexpected advantage of formal referring criteria is that Kant can deal with exotic "experiences", the temporal and measurable values called "observables" in modern physics which do not inhere on a substance as classical and indeed epistemically well-attributed Kantian properties do.

[32] By "beings like" us I mean to refer only to our kind of perceptive powers and functioning; it seems obvious that it is a general phenomenon of an animal's sensory capacities putting it in touch with their surrounding environment. But beyond this natural phenomenon that is the province of science, as Gaskin 2006 argues, there is for human experiencers the problem of reference and the genuineness of their sensory input. Though I take a rather speculative path in developing this point, there is a line of commentary that aims at similar defenses of realism, which are both detailed and scholarly, see Allais 2004 and Westphal 2006. My own aim or rather hunch in following this path is that if *we allow particulars* in the Kantian account, these cannot be just spatio-temporally identifiable, and then if we make them instantiations of properties in judgements we have lost them as particulars.

system, more simply: they are how beings like us learn first-hand about their environment.[33] The looks, sounds, feels of things, the manifold of qualitatively varied sensory content is just information about our environment, which once received, needs classification, identification, retrieval and so on, in order to be recognizable as a "message"—in order to be learning—we pick from our environment; so this first hand awareness of information-rich world, or, more radically our being in information rich states just by virtue of being in information-rich environments, requires reduction into a manifold so that we can put sense to judgement, to epistemically evaluable units.[34] The point of this—admittedly sketchy—fuller realist picture is that we depend for information on receptivity and on the channels that convey it and this is the case for sensory content as it is for email content and so on; and of course the picture is realist while allowing that something counts as information if some receptor gets it.

Acceptance of this last speculative suggestion does not affect the overall argument that unification of the objects of experience can fulfil both testing and continuity tasks, all thanks to the dual role of the a priori forms of sensibility, which restrict the use of a priori concepts, while identifying the necessary properties that existing objects of experience possess, thereby securing reference for scientific empirical statements.

3. From Kant to Hegel

I hope that the previous two sections have done enough to show how the idealist naturalism I attributed to Kant has at its disposal sophisticated tools to address both the testing and the continuity tasks that it shares with some contemporary naturalist programmes in philosophy. Having Kant's project in view is indispensable for understanding Hegel's starting point about what is philosophically possible, his identification of what is necessary, the so-called "completion", and his expectation of what is achievable.[35]

A contextual clarification is perhaps in order here. Already in my use of the term "idealist naturalist", I distance myself from two prominent lines of inter-

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[33] The novel term is "information", which I borrow an early formal account of transmission/reception (Shannon [1993 [1943]: 7). Formalism is an advantage because it allows us to consider empirical content as having a role, a cognitive one in fact, without the need to enter into the conceptualism/non-conceptualism controversy. In information theory, it is acknowledged that the word is not context invariant, but rather it changes according to fields in which it proves useful (Shannon 1993:180). This too is attractive because it fits the dynamism and variety of our sensory systems. Generally, it is accepted that "information" can also have a number of physical or material realisations (see Drestke 1981 for an attempt to offer a semantic account). All this goes against the most famous perhaps philosophical appreciation of information theory by Daniel Dennett (2017) who sees it as supporting the exact reverse view of senses I presented here (Dennett 1988). The speculative piece with which I conclude this section is an invitation I read in Kant's argument about empirical representations to let go another piece of philosophical inheritance in which the senses are just a maddening philosophical problem about qualia.

[34] I keep deliberately underdetermined these tasks because my proposal can co-exist with both non-conceptualist and some conceptualist interpretation; the issue being of course the nature of the manifold of these received contents (for passages suggesting its dependence on concepts see A 77, B 102-103; A 105; B129; for passages that do not see A 116).

[35] The original source of the term "completion" is Hegel's letter to Schelling dated April 16, 1795 (Butler and Seiler 1984: 35).

pretation. One, now relatively obsolete, interprets Kant as honorary positivist, who asks that our knowledge claims be restricted to empirical facts. The other, still current, interprets the move from Kant to Hegel in terms of the progressive emancipation of philosophy from the vestiges of rationalist metaphysics, in favour of naturalism, understood now broadly, as a programme for re-orienting philosophy, by specifying a domain of philosophical enquiry and the type of answers that are acceptable. While seeds for each interpretation can be found in the relevant texts; they risk recreating, in historical garb, a vexatious twentieth century choice between the rock of a naturalistic vocabulary that can appear too restrictive and distorting (Stroud 1996: 48) and the hard place of "expansive" and "open-minded" naturalism, which reduces to mere attitude of "open-mindedness" (Stroud 1996: 54).[36]

On my reading, Hegel shares Kant's concern with the autonomy of philosophy and its relation to the natural sciences. He seeks to justify its authority and its claim to autonomy, by showing how it can successfully perform the testing and continuity tasks, which he also sees as vital in properly conceptualising the relation of philosophy to the natural sciences. Despite the element of "completion", which I shall soon explain, Hegel's idealist naturalism is no more nor less "idealist" and no more nor "naturalist" than Kant's.

Anticipating somewhat, I will argue that Hegel's need for completion is presented first in terms of resolving a problem with unification and testing he identifies in Kant. At the same time, once this problem is resolved, it gives a different shape to the continuity task, the aim remains the philosophical provision of a realistic account of the relation of thought and nature that does not require supernatural appeal (to a divine epistemic guarantor for example). The term "realism" tends to be too broad, so to narrow down its Hegelian sense is the search for a position in which items do not admit of further interpretations, conceptual schemes or what have you, they acquire a certain stability, how this is achieved is through the idea that thought is capable of specifying particularity, perfectly and without any remainder. "Completion" then has both the sense of this positive claim about thought—thought itself accomplishes itself, so to speak—and the more traditional, relational sense of engagement in deep and critical dialogue with Kant.

3.1. Hegel: Unification as Self-Knowledge

Hegel's commitment to the systematicity of thought is not only explained by the solution unification offers to the problem of testing philosophical claims. Testing remains, nonetheless, a central motivation both to expanded and systematically interlocked unification project he undertakes and to the dialectical logic that binds the whole together.[37] The sense of "completion" that is relevant to this section is the relational one, because the need for completion arises from the

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[36] For a defence of resolute naturalism, see Rosenberg 2011; expansive naturalism is defended in McDowell 1994.

[37] For an excellent account of the commitment to systematicity see Sandkaulen 2017. On dialectic see Winfield 1990. At the same time there is considerable overlap in aims with the epistemic function of unification in Kant and the range of projects to which this is relevant. For an indication of the range of these projects, empirical and philosophical see EL §12: 16-18, and also the ideas of "unity" and "system" in EL §14 and §15. The points are repeated again in EN §250 and Remark.

identification of a problem with constitutive unification. Specifically, Hegel argues that at the constitutive level, unification fails, because the definition of the object domain is incomplete, the domain is disunified. The problem is that alongside the positive account of experience Kant gives, he allows for an "other world"—the "negative of every image", the "Thing-in-itself" (EL §44: 72). The thesis about our ignorance of things as they are in themselves leads to suspicion of the credentials of the categories as objective forms; they are, Hegel says, "*merely our* thoughts, and separated from the thing as it is *in itself* by an insurmountable gulf" (EL §50: 83).[38] The problem, as Sally Sedgewick recently put it, is that "we have no grounds for supposing that [the subjective form of experience] reveals the reality of the given sense content itself" (Sedgwick 2012: 136).

To say that things as they are in themselves are a problem for testing and ultimately for philosophical autonomy sounds like an odd diagnosis of Hegel's criticism, since, as Sedgwick puts it, it is the *reality* of the objects of empirical representations that is threatened by a competing thing with a claim to being real. Note that if we go down this path, it is easy to fold epistemic and referential issues, since if what we thought was real is merely what we count as real, it is the "counting" that matters. To put it differently, our ability to make fine epistemic distinctions is not affected (indeed, historically this problem has been taken as an opportunity to transform all questions into epistemic ones).[39] I take a different view of the criticism.

To make the problem Hegel identifies perspicuous let us start by drawing a parallel between what we may call the positive and the negative application of the criterion of conformity to the a priori conditions of human sensibility, space and time. Earlier we saw that the a priori forms of sensibility have an epistemic role in restraining the application of a priori concepts to possible object of experience, thereby securing their proper use; they also have a role in establishing minimal realist reference for empirical representations. When it comes to things in themselves, we have an epistemic thesis about ignorance, the negation of the same criterion: we do not know things as they are in themselves because they are not things that appear in space and time. The negative application of the criterion establishes a priori a case of ignorance but also, because this is the *only* known feature of the things in question, it yields an a priori criterion for ontological commitment to these unknowns, which states that some things are real just in case they are in *every respect* independent of our cognitive abilities. The problem, which creates a need for "completion", is the threat of metaphysical realism, a position that defines a domain exclusively through its transcending our unifying abilities, yet qua *domain* of it is unifiable, albeit a unifier with other

[38] Sedgwick 2012 gives an exemplary analysis of the standard view of the Hegelian criticism; see Houlgate 2016 and Stern 1999. The reading I attribute to Hegel, which aims to minimise the ontological commitments of the thesis without entirely suppressing them is inspired by an early suggestion by Ameriks concerning Kant's ongoing reflections on his relation to traditional ontology (2003: 133).

[39] The ontological version of the criticism can be found in Hegel (e.g. EL §45: "the things immediately known are mere appearances—in other words, the ground of their being is not in themselves but in something else") but not in order to explain the subjectivism charge, rather Hegel here criticises Kant for not following through to the "step of defining what this something else is" (ibid.). I think the thesis I attribute to Hegel in the following section can make sense of this claim; for an alternative view see Kreines 2007.

abilities, e.g. a divine unifier.[40] Even as a possibility, metaphysical realism is a threat because it unpicks all the hard work of the constitutive unification and undermines its results, namely that a systematic a priori relation between objective and subjective is possible and within human reach. For this reason, Hegel complains that we are left with *merely* our thoughts.

It is worth noting that although Hegel's criticism fits more naturally the so-called two-world interpretation, it is applicable to the two-aspect interpretation, which states that we can only know things given certain conditions and that abstracting from such conditions in the hope of identifying features of mind-independent reality is a self-defeating enterprise. We may engage in such abstraction entirely legitimately, when we consider things not as putative objects of experience but as they are in themselves. From a Hegelian perspective, the claim that they are thinkable invites a question about the possibility of this thought. On the two-aspect interpretation, possibility is just the absence of contradiction in the thought of one thing under two different aspects. The truth of this possibility is put at risk by the unknowability of one of the two aspects and a way to stabilise the position is to grant these thinkables ontological weight and bring metaphysical realism back in the picture.

"Completion" is the removal of this threat through strengthening the epistemic gains of constitutive unification. In effect, Hegel's systematic writings can be viewed as a heroic project of constitutive unification, which aims to show for a whole range of concepts how their application is relative to object domains and how, conversely, object domains as unified through appropriate forms of thought. For Hegel unification has to be ambitious in order to account for the diversity and range of human experience, but also systematic in order to resist the centripetal force of such diversity and range. For each object domain, e.g. nature or mind, which are the two on which I focus mainly here, unification will be internally differentiated through appropriate concepts and by the same means formative of a system. The aim is to achieve a unified whole or a "totality", which, Hegel clearly acknowledges, is a philosophical demand: in "our ordinary thinking the world is grasped as an aggregate of finite experiences" (EN §247 *Zusatz*, 16) but philosophy requires conceptual order to be established out of this aggregate. So, for example, "nature is to be regarded as a *system of stages* one arising necessarily from the other", this is not "generated naturally", it is a matter of the "idea" (EN §249: 20). Given the ambition of Hegelian unification, it seems hard to maintain that this project can contribute to testing philosophical claims, or, looking ahead, that it will have anything to contribute to the realist requirements of the continuity task. I will focus on testing here and take up the continuity issue in the next section.

Testing is integral to the unifying process. The test is whether some candidate concept is cognitively up to the task. The testing is entrusted to dialectic, now upgraded from mere logic of illusion, to thought's own way of checking on

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[40] The implied contrast between empirical and metaphysical realism can mislead in various ways. I attribute to Kant empirical realism, in the sense of realism about reference. I attribute to Hegel the view that metaphysical realism, as here defined, is problematic. Nothing follows from this about how Hegel deals with continuity, more precisely whether this requires commitment to some form of realism on his part. So, the position I present is sharply at odds with Tom Rockmore's diagnosis about Kant and Hegel's rejection of metaphysical realism in favour of epistemological constructivism (Rockmore 2005: 219).

its own claims. Hegel uses dialectic to show the limits of certain forms of thought, he then allows these forms to play out in full their limits, in the expectation that there is some further as yet indeterminate object or object domain that the concept, in failing its prior determining task, may yet adumbrate, thus opening up a new domain of philosophical enquiry.[41] The effect of this procedure is twofold: the proper limits of concepts are set, but because they are set in a dynamic fashion, by allowing over-extension of concepts, there is no absolute limit to conceptual reach and so no limit to the unifying process as a whole; ignorance is relativized to particular epistemic expectations attached to particular concepts, which they partly meet partly fail and so on.

Guiding Hegelian unification are three basic theses about cognition, which I reconstruct below and illustrate with reference to the "Philosophy of Nature" and the "Philosophy of Mind".

(*a*) The first thesis concerns the cognitive insufficiency of concepts use that present as having too few links to other concepts or as inadequately differentiating between essential and nonessential characteristics of the object studied.

In the discussion of nature, Hegel describes these as giving us the "external" relations of nature. The cognitive problem arises thus: "in the sphere of nature contingency and determination from without has its right, [...] especially concrete individual forms, [...] the immediately concrete is a form of properties external to one another and more or less insufficiently related to one another" (EN §250: Remark 23). Given the task, which is to conceptualise the "infinite wealth and variety of form" (ibid.) of nature for the purpose of studying it, these external relations are a problem: "nature everywhere blurs the essential limits of species and genera by intermediate and defective forms, which continually furnish counter examples to every fixed distinction" (EN §250: 24). Parallel difficulties arise in the study of mind: if we stay in the context of ordinary "knowledge of men" which is limited to their "*particularities*, passions and weaknesses" (§377: E 9). Amassing such knowledge cannot give knowledge of the "universal", of "mind itself" (ibid.).[42]

(*b*) The second thesis is that for each domain, a systematic set of hierarchically ordered concepts is discoverable that stands in ordered relations to other domains.

In the case of nature to grasp the idea of it we need to look at the detail of "its various specifications and then bring them together" (EN §244: 4). The

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[41] In the "Philosophy of Nature", for example, Hegel writes that it is through its own dialectic that nature "breaks though the limitation of this sphere" and attains the "higher stage", which is "Mind". This is a prime example of how Hegel uses dialectical over-extension of a concept to relate different object domains. From one point of view the claim is incredible, *mere* over-extension. From another point of view, notably the section on the soul in the "Philosophy of Mind", it opens up for philosophical discussion a whole range of features such as age, physical location, affective state of being, which affect minds but are also of natural givens, and so help clarify concepts of selfhood and self-control.

[42] While Hegel's way of putting the problem may sound old-fashioned, the problem he describes has been central to the philosophy of biology, even when pluralism is proposed as the best solution (see Dupré 2012); and philosophically, it is a legitimate question to ask after the essential possibilities of things. For a more robust defense of Hegel's argument see Houlgate 1998.

"thinking consideration of Nature" (EN §246: 6) systematises and unifies through examination of the different "specifications", that is, theoretical attempts to explain how different elements, features, relations, and so on relate to one another. The test is whether the concepts by which "progression and transition" in nature can "be made clearer" (EN §249: Remark 20).[43] So while the unificationist aims provide some criteria for testing, it is also the case that the project is bounded by the theoretical material available to philosophical scrutiny, namely the concepts in use by specific sciences. The idea is that by focusing more narrowly on the ways in which nature confronts us as an object of study, in mechanics, physics, organics, it will be possible to generate a dialectic sufficiently potent to identify concepts that have a legitimate claim to objectivity, which does not derive just from the currency of their use in the natural sciences. The "totality" (EN §244: 4) that unification ultimately seeks is not a mereological aggregate, nor yet artificially organised; it is a systematic unity that has not lost its contact to the multiform natural given.

In the study of mind, the dialectic is conducted through criticism of existing unifying projects, such as rational psychology, for example, the study of the soul and its attributes, which Hegel dismisses as "pneumatology", "an abstract metaphysic of the understanding" (EM §378: 11). The problem is that it treats the mind—or soul—as an inert thing with properties, e.g. simplicity and immateriality. He is equally critical of empirical psychology, which makes the mind object of scientific study, but effectively dissolves it into a multitude of explanatory notions such as forces and faculties that correspond to the various things minds do (EM §381: 12). Again, we can characterise unity proleptically as a notion that makes space for the activities described in empirical psychology, but not as a "mere aggregate" (EM §381: 12), and makes sense of the properties identified in rational psychology, but not as belonging to an inert substance. While formally the process of unification parallels that of the "Philosophy of Nature", the aim is no longer objectivity and scientificity—at least as these might be ordinarily understood—but the proper understanding of mind, which is subject and object of the study; accordingly, the vocabulary describing the success of unification is more demanding and task specific and, therefore, defies quick summary (see EM §386: 22-24).

The systematic expansion of object domains, such that include domains that are conceptually elusive (nature) or only abstrusely characterised (absolute spirit or mind), amounts to the expansion of the critical study of the range of conditions of cognition, that is, the relevant unifying concepts. Thesis (*b*) establishes that if these conditions don't apply some others do; as a result, Hegel manages to relativise anything that would play the role of the negative epistemic criterion which, on his criticism of things in themselves, yields an ontological one with disastrous consequences. But it is thesis (*c*), below, that closes the door on the possibility of some a priori unknowables, by spelling out what exactly is at stake in unification.

(*c*) The third thesis is that unification can count as a cognitive gain, if the accomplishment of the unification task is not decided ad hoc, but rather obeys a

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[43] In the fuller account given in the *Logic* Hegel describes how the new concept is also "higher and richer than the preceding—richer because it negates or opposes the preceding and therefore contains it, and it contains even more than that, for it is the unity of itself and its opposite" (SL-dG 33; cf. SL-M 54).

criterion that is the same across the whole range of domains, yet also internal to each; the only criterion that fits, and is such that it does not allow for any remainder, is if the achievement is stated as form of self-relation.

Self-relation is not a mark of cognitive gain, if we consider it a trivial matter; nor is it a cognitive gain, of the type sought, it we consider it an eternal truth. Hegel describes a relation between thought and thought, e.g. the philosophical analysis of the organising concepts of the natural sciences, which aims at identifying the appropriate form of thought at every stage and with regard to every object domain of reflective thinking. The systematic and critical demands that shape this kind of self-relation—which continues, after a fashion, the project of the self-criticism of pure reason—sustain its cognitive ambitions and give some means by which to judge what is gained at different stages of unification.[44]

3.2. Open-Mindedness and Particularity

The Hegelian species of idealist naturalism, as presented so far, seems entirely taken by the tasks of unification and testing, leaving no obvious entry point for what we called at the start a realistic account of the relation between thought and nature that can sustain continuity. More generally, the very ambition of Hegelian unification can raise a question about the possibility of making a convincing case, within the system, about the reality of the source material that gives us the object of our "thinking study" (EL §1: 4). I will argue that continuity is served by a position that attempts to give more precise shape to the particulars identified in the Kantian defence of realism about reference. The Hegelian version resembles semantic realism, insofar as it is about the relation between meaning and meant for a range of value terms. The similarity can mislead though, because, on Hegel's account, the relation can be one of perfect match, which would leave the two *relata* only conceptually distinct. The basic argument, which does not easily fit contemporary philosophical categories and positions, is a defence of "actuality".

By way of introduction, it is useful to consider a criticism Hegel addresses to Kant concerning the doctrine of things as they are in themselves, which does not target the epistemic damage incurred by its ontological commitments, but rather the limitations of Kant's metaphysical ambition. In the *Encyclopaedia Logic*, Hegel writes: "the things immediately known are mere appearances—in other words, the ground of their being is not in themselves but in something else" then takes Kant to task for failing to take the "step of defining what this something else is" (EL §45).

One way to interpret this complaint is as if it came from a rationalist metaphysician: the request for ground is the request for what accounts for the things immediately known. Hegel would then be asking Kant to provide a sufficient reason why things known are as they are. The request presupposes belief that such reason exists (whether known to us or not). Such belief is justified on the basis of commitment to PSR. As we said earlier, PSR is regressive, leading to a necessary being that stops the regress. But PSR has a logical as well as epistemic

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[44] The interpretation and indeed the formulation of thesis (*c*) depends on the unificationist topic of this section; other more familiar ways of stating (*c*) include subject-object identity, or the speculative closing of the gap between spontaneity and receptivity (see Sedgwick 2012); or the gap between ontology and epistemology (see Miolli 2018).

and metaphysical role, and as such it responds to explanatory demands of a particular subset of events, those that are the product of intelligent action. No mechanistic explanation provides sufficient reason for those, because mechanistic explanations do not have the requisite internal connection between intelligent choice and action; only reasons do this, and ultimately only reasons that are formed of valuations concerning what is best to do. This is Leibniz's deep insight into PSR: it is intimately connected with the doctrine that actions are undertaken under the guise of the good. If we look at the world as the result of divine choice and action, then PSR guides us to the idea of optimality as explanatory for the divine choice embodied in the creative act. It is for this reason that Kant himself in his pre-critical writings adopts a form of PSR he terms "determining reason", meaning a reason that explains the existence of contingent beings. Theodicy just falls out of this set of connections. I think this interpretation of Hegel's complaint is not the right one, but it is one that matters for understanding his positive claims.

Another way of interpreting Hegel's complaint about Kant's silence over grounds is that he identifies a weakness in Kant's defence of realism about reference, namely that it leaves something out that matters *for* realism.[45] The thought is this: a description of experience that *only* allows for spatio-temporally indexed instantiations of properties leaves *out* an essential part of that same experience, namely that it consists of encounters with particulars. If a way can be found to attend to this feature of experience philosophically, then that of which we make a thinking study will have been acknowledged and the continuity demand fulfilled. But how can we attend to this feature of experience? All we have at our disposal, besides spatio-temporal indices, which don't give us more than positions in a grid, are concepts and concepts are promiscuous. The sort of attention Hegel considers appropriate is the sort that explains how a particular is the way it is; the aim is not to show how it is for some subject, which is the phenomenological way of attending to the particularity of experience, but rather to show how the particular stands objectively as such in relations that uniquely identify it. This is what the theory of actuality, he sets it out in the *Science of Logic*, aims to achieve.

When Stroud recommends "open-mindedness" (Stroud 1996: 54) as general philosophical policy, he could not have in mind the *Science of Logic* despite the fact that it presents itself as an example of extreme open-mindedness, or in Hegelian terms "presuppositionlessness". There is a long and interesting debate, about the nature of "presuppositionlessness", or whether it is achievable, desirable, and to what extent Hegel achieves it.[46] This debate is not directly relevant to the problem at hand, though of course it does give an idea of the distinctiveness of the *Logic*, which is also a unificationist project: the object domain is forms of thought. But it seems odd to try to describe, in parallel with other unification

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[45] I believe that what I am about to argue resonates, while differing in detail and material for the argument, with Paul Redding's diagnosis regarding the notion of the "singular" (Redding 2007) and its fate in the analytic reception of Hegel's philosophy esp. the diagnostic chaps 1 and 2. On a conciliatory interpretation of his work on the logical singular and my claims about actuality these are two ways of reaching the same goal; however, Redding has also championed actualist interpretations of Hegel that are at variance with mine.

[46] See e.g. Winfield 1990, Houlgate 2006.

projects, a relation between forms of thought and concepts. Furthermore, at this level of abstraction, it seems very difficult to show that the forms of thought are sufficiently constitutively independent to what it is they determine and so worthy of a dialectical examination to prove their claim to thought. This is where the rationalist metaphysical position outlined earlier is helpful in clarifying is going on in the *Logic*. Hegel's aim is to show that forms of thought can be determined and that their determinations can be shown to be right, without external rightness criteria.[47] How this comes to be a philosophical problem can be illuminated through PSR. If PSR is assumed and the divine mind and will are bracketed out of the account, what is left is a demand for a "determining" reason (Kant's adaptation of "sufficient"). Absent the regress-stopper, the demand translates as a philosophical examination of what sort of determining determining reason does. The logical object is the function of determination, which Hegel calls, determinateness or *Bestimmtheit*. So, unification aims at the perfect determination of *Bestimmtheit*.

The logical unifying project is carried out just like other unifying projects, through a priori reflection on candidate forms of thought that have a *prima facie* legitimate claim to persist in thought. Determinateness or *Bestimmtheit* is the achievement of determination. After consecutive partial successes and partial failures of determination, the *Logic* reaches, in the penultimate section, the topic of the good. The gradual transformation of the task of determination from logical to axiological corresponds to the Leibnizian insight that PSR and GG are connected or that there is an explanatory nexus between determining reason and goodness; goodness is the ultimate explanation. At the same time, in the context of the *Logic*, full determinateness is the achievement of the perfect particularisation of the form of thought it is about, so full determinateness is in itself the realisation of a value. That the value of determinateness is achieved in the topic "good" suggests that the solution to the particularity question is not topic neutral, in other words, that unique determination of particulars is a matter of their identification as good.

In "The Idea of the Good", one of the problems is trying to determine the good or whether something is good.[48] This in turn manifests as a problem of determinateness and presents us with the task of identifying what is genuine good and separating it from impositionist concepts that stamp "good" on a neutral value-free world—"realm of darkness" (SL 731). Impositionism is unsatisfactory, if we want our ideas to be true. But we are ex hypothesis not in position to recognise the true good, since we have no prior determination of it or a way of checking how a thought is to be compared with something real. The solution is to move away from this static model and think of the good in terms of a practical form thought. A practical form of thought is not an attempt to copy an idea onto reality, but rather to give weight to certain considerations in doing something, realising some end. With respect to values, or at least good, determination is not a theoretical matter of adding but a matter of doing something on the ba-

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[47] It is worth noting that presuppositionlessness contains another important clue, a relation to the Kantian notion of "unconditioned". So in a way that parallels Kant, it can designate the search for a thought that can bring unity across different unifying formal systems of thought.

[48] The following is a simplified summary of arguments I have presented in detail in Deligiorgi (2020a, 2020b).

sis of the good, thus realising the good. But obviously not all such realisations are guaranteed to be good, people make mistakes, misread situations, misunderstand their own motives and trains of thought.

A basic way of understanding actuality, as Hegel uses it in this section, is as determination that is full, error-free and leaves no room to doubt. In earlier sections of the *Logic*, actuality is contrasted with empty possibility and with abstraction; so something would be actual if it is really possible, so instantiable, and also if it is actually instantiated, and has some content. But since our problem now is with the practical determination of the good, we need a different sense of actual that tells us more that it is instantiable and that it has some content. We want an "actual" that gives us the full good and nothing less than that. The notion of "actual" here is explicable in terms of determinateness that is maximal or "complete" (SL 731). This transformation of determinateness into an axiological term allows actuality to count as a value, because actuality just is maximal determinateness. But this is not just a cheaply earned terminological equivalence: if we say for some region x is actual we are saying that in that region x is maximally determined, there is no proposition that is true of that region that contradicts x and at the same time x is specified in that region fully, without any gaps.

The upshot of this discussion is that the value of "good" is fully realised, if the good becomes actual, that is, if reality is considered as the consistent set of *all* true value propositions.[49] A worry can arise here about how a unificationist project, which uses contradiction in the dialectical testing of claims, yields all of a sudden a characterisation of reality that has the virtue of actuality. Reality, as fully determinate, is the result of the progressive clarification through testing of the function of determinacy and what is tested is nothing other than the determining powers of forms of thought with a putative claim to capture reality (or, at the start "being" as such). The criterial role of consistency depends on the truth of value propositions and this, in turn, depends on the realisation of good, in a way that admits of no exceptions, no gaps or contradictions, or some unforeseen effect that diminishes the goodness and so on.

Still there are two puzzles about the actuality of the good, the first about how maximal determinateness is achieved, and the second about why it is achieved with a value term, namely the good? The first puzzle arises because Hegel seems to claim that "good", a notion that is semantically rich, can have extensional relations of fit, of the sort that are possible only with logical or mathematical notions. On way to achieve full determinateness is to indefinitely enrich the meaning of "good" so that it includes exceptions, conditions and so on. But Hegel is not proposing this. Rather he argues that the good successfully determines reality if the familiar yet not fully determined notion is correctly attributed in all cases in which it is used. One condition for this is that the subject term of the evaluation is fully determined, so that there are no hidden, unknowable, or *in potentia* elements to it. This is just a description of a uniquely identifiable particular. The assignation of goodness as a predicate for such a subject is the identification of a constituent element of it as its form of goodness: the particular is not identified with the good, nor is yet an instance of the good, rather it

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[49] I do not use this in a technical sense, "claims" or "sentences" would be just as good, the drawback being that they distract for introducing in the wrong place the thought of putative subjects making these claims and uttering those sentences.

is identifiable *as* good. This is what allows the goodness of each particular to be correctly acknowledged while the term remains stable across all its applications. Unique identification is the corollary of the maximal determination of reality: this is an abstract definition intended to acknowledge the particular, the missing "ground" of the things in themselves.[50]

The second puzzle about the value term is relatively easy to solve because from the start the enquiry is about the goodness of determinateness and seeks to achieve such goodness, which is finally actuality. The twist in the end is that such, shall we say intellectual virtues, are not insulated from, but rather form a part of a capacious conception of goodness, such that guides actions in practical syllogisms. And while actual working scientists may not find much that is directly supporting their research is such conclusion, the outline given here of Hegel's argument about actuality in the *Logic* suffices, I think, to show the centrality of his concern with showing how thought about reality can be realistic, that is, answer properly to what is.

4. Conclusion

By way of concluding remarks, I want to draw attention to one distinguishing characteristic of the genus idealist naturalist, I sought to describe in this paper, namely its commitment to philosophical autonomy. Autonomy is not just assumed; it is earned thought testing. The idealist conception of testing of philosophical claims borrows from rationalist metaphysics the idea that rational organisation places demands such that mere collections of contingently found facts do not meet. The transformation of this idea from one with ontological and theistic implications to a pure demand of rational thought, which rational thought can and ought to be able to meet through its own resources, is key to the vindication of autonomy. The upshot of instituting this internal tribunal is a complex unification project—or set of projects—which correspond to the search for external checks that contemporary metaphysical naturalisers seek, when they turn to the findings of natural sciences. At the same time, in its narrow anti-supernaturalism, idealist naturalism shows kinship with the broader naturalist kind, such as expressed, for example, in Sophie's remarks to Leibniz quoted at the start of the paper. I qualified the anti-supernaturalism as "narrow" to indicate that there is space for transcendent elements and for a conception of the divine in both Kant and Hegel's thought, simply not as a result of commitment to logical or epistemic principles. As for the different ways in which each defines the supporting role of philosophy in establishing continuity with the natural sciences by fulfilling a realist agenda, matters are complicated. Counterintuitively, what counts as realism for Kant and for Hegel depends on acceptance of idealist theses, which are neither straightforward nor uncontroversial even among interpreters of their work. The versions I outlined may well seem outlandish and unconvincing, and therefore inline contemporary naturalists to count their idealist cousin as a mere historical curiosity. However, in seeking to broaden the context of understanding and justification for these idealist positions is to allow

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[50] The uniquely identifiable particular in this context is also usefully comparable to the particularities Hegel dismisses in thesis (*a*), which we discussed previously, in the context of motivating his unification project. From the vantage point of the *Logic*, such particularities can be described as insufficiently determinate.

consideration of the reasons shared that explain the philosophical possibilities Kant and Hegel consider as promising and those they reject. As I argued, key to their choices is the weight they both put to our capacity to think, and to the fact that once the active nature of the exercise of this capacity is acknowledged, certain intellectual responsibilities follow that simply cannot be relegated or outsourced.[51]

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