Macbeth and Hegel on the Historical Realization of Reason as a Power of Knowing

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Abstract:

In her latest book Danielle Macbeth has embarked on a project that, in its ambitious attempt to chart the *realization of reason* in an historical process running from the Greeks to the present, can be compared to Hegel's. For her, the key philosophical figure in this narrative is the logician Gottlob Frege, and although Frege is usually thought of as the thinker behind the emergence of analytic philosophy, Macbeth's Frege is dissociated from that context, and portrayed as instantiating the final phase in her Hegelian narrative—pure reason as a power of knowing. Here Macbeth's and Hegel's projects are compared, and a non-traditional interpretation of Hegel's concept of metaphysical knowledge is invoked in an effort to sharpen what Macbeth might actually mean by her conception of pure reason as a power of knowing.

Keywords: Macbeth, Hegel, Frege, mathematics, logic, metaphysics

Danielle Macbeth's *Realizing Reason: A Narrative of Truth and Knowing* is, as its title and subtitle suggest, a book of very ambitious scope: it sets out a philosophical account of the *realization* of reason from the Greeks to the present. Philosophically considered, the idea of the realization of reason, of course, means more than simply the accumulation of knowledge. Here it means the historical development and explication of publically assessable rational practices that can be considered as the infrastructure responsible for the attainment of such knowledge. Macbeth accepts the idea that it was the development of natural language that allowed our species to move beyond *mere* animal existence, making possible a type of *rational* life beyond the realm of organic life in a way parallel to that in which the development of organic life went beyond the merely physical and chemical processes preceding it. But particular symbolic and, importantly, written, extensions of natural language have been part of the process of allowing reason to reflect and work upon, and so transform its own

practices. In terms of scope, the obvious comparison for Macbeth's project is that undertaken by Hegel some two centuries ago, and many parts of Macbeth's narrative in a sense run parallel to Hegel's own account of the realization of "reason in history".

Like Hegel's, Macbeth's narrative commences with the Greeks and includes an account of the radical transformation that came to separate modern forms of thought from those characterizing ancient classical culture—an idea of the systematic differences between the "ancients and the moderns" that had first arisen in relation to modern and ancient art forms and that Hegel generalized into the idea of systematically different modes of "spirit". Also, as in Hegel's narrative, the key thinker for understanding the general features of this modern transformation of reason is Kant, as is the idea of the need to get beyond the limitations that flow from Kant's restriction of reason to the operations of what he called "the understanding", the reflective application of empirical concepts to *data* received from the world in perception. And again, as in Hegel, *some* type of retrieval of features of the ancient form of thought that the moderns believed they had gone beyond is seen as crucial to the full realization of reason that was promised, but not achieved, with the "modern" cultural turn. However, it is *not* Hegel who is the hero of Macbeth's story, but the late nineteenth-century German mathematician, Gottlob Frege, commonly considered to be the grandfather of contemporary analytic philosophy. Macbeth's Frege, however, is *not* the familiar figure commonly encountered within analytic philosophy and its own "creation myths": he is not the early creator of what is typically called "classical logic", the modern quantificational logic that was to become dominant in the 20th century, and her account is not one of the triumph of analytic philosophy as standardly practiced today. Macbeth finds much contemporary analytic philosophy as having failed to "realize reason" and as relying on the limited Kantian style of philosophy beyond which Frege has enabled us to go.

In this respect, Macbeth's narrative of the realization of reason builds upon her earlier reading of Frege's logic (Macbeth 2005). Thus she is not so concerned with those episodes in Frege's career with which readers of the history of analytic philosophy are likely to be familiar. For example, she effectively dismisses the famous paradox that Russell had detected within "basic law V" of Frege's

Grundgesetze der Arithmetik of 1883—an inconsistency supposedly testifying to the problems of Frege's naïve set-theoretical assumptions. *Those* sorts of worries are in many senses simply irrelevant to the revolutionary Frege that Macbeth wants to recover as they beg conceptual distinctions hanging over from the earlier period of thought that Frege had shown the way beyond.

Macbeth considers Frege as first and foremost a philosopher of mathematics whose logic and whose accompanying doctrine of "logicism" must be understood historically as responding to developments *within* mathematics as it had come to be practiced in the 19th century—developments that had effected a radical break within mathematics as practiced since the time of Descartes, who had himself brought about a break within mathematics from the mode in which it had been practiced by the Greeks. Thus Macbeth places much emphasis on the newness of mathematics of the 19th century as found in the work of the likes of Bolzano, Riemann, Galois, Dedekind and Hilbert. Such a way of doing mathematics was so radical and innovative, she believes, that it deserves to be considered as the second birth of mathematics itself. As the first birth occurred with the Greeks, the implication is that this revolution outstrips in significance the change from ancient mathematics to its early modern form.

In Macbeth's historical account, the mathematical practices of the Greeks, the early moderns, and the nineteenth century innovators can be lined up with the emergence of different "powers" that give expression to reason itself: the Greeks with the immediate perception of states of affairs; the early moderns with the reflective application of general concepts to the data of perception (the power of the "understanding"); and finally, the nineteenth-century mathematical innovators with the power of reason itself. This last power is one that operates from precisely defined concepts *without* the intermediary of objects of which those concepts are meant to be true or false. It is a form of reason that while *deductive* is nevertheless, *amplicative,* adding new knowledge and not simply making explicit something that was already known implicitly.

It was in relation to the need to display this new form of reasoning in a publically accessible way by the use of a new script—the concept script or *Begriffschrift*—that we are to understand and appreciate Frege's achievement. While

standardly, elements of Frege's logic have been absorbed, largely via the intermediaries of Russell, Tarski, Quine and others, into a story of a development of modern or "classical" logic through the first half of the twentieth century—a logic the semantics of which appealed to set-theory and so was understood extensionally—Macbeth's Frege is understood as having *gone beyond* the framework within which conceptual relations are understood in terms of the relations among those concepts' extensions. That is, what is now understood as "classical logic" and regarded of as Frege's achievement is bound to the earlier form of mathematics that Frege had realized was being overtaken, as well as to the Kantian philosophical reflection on that form of mathematics. This was because the new mathematics was conceived by its practitioners as reasoning directly from defined concepts, and so as able to by-pass the appeal to intuited diagrams that had originated with the Greeks and that had been retained within Kant's account of mathematics as based in the purely intuitive representations of space and time.

Russell had championed a form of geometry that rejected diagrams in favour of the axiomatic method, but as I read Macbeth, Russell's rejection of the diagrammatic would be considered superficial. Descartes had interpreted a diagram as a way of presenting law-like correlations relations among individuals—the points located with respect to values on the "Cartesian" axes—and Russell, in his account of axiomatization, simply accepted this conception of the disposable role of diagrams. In contrast, Macbeth seeks a deeper analysis of the ways in which diagrams encode information and exhibit relations. Moreover, there is a sense in which the diagrammatic dimension introduced by the Greeks returns in Frege—not at the level of the first order mathematics (which is purely conceptual), but at the level of the language of the *Begriffschrift* itself. Thus, the peculiarities of Frege's diagrammatic way of presenting conditionals, with "concavities" containing Gothic letters, and so on, cannot be understood simply as *another* way of presenting a system presented in terms of universal and existential quantifiers with their bound variables. To understand what is at stake here in Frege's attempt to give overt expression to the reasoning implicit in such mathematics conceived as working at the directly conceptual level we must go back the earliest phase of the story of the realization of reason—the dual developments in ancient Greece of Euclidean geometry and Aristotelian logic and metaphysics—and understand the role played by diagrams in

Euclidean geometry and syllogistic logic as specialized extensions of natural language meant to display, and so allowing reflection upon, the conceptual relations immanent in thought.

Macbeth's attention to the details of these specialist systems of representation testify to her effectively *externalist*, somewhat late Wittgensteinian/Sellarsian, account of the mind and its rationalist capacities. Without publically accessible and transmissible practices and the symbolic structures within and upon which these practices are carried out, an individual might be said to be in some private sense capable of reason, but could never be self-conscious about this process *as* reason, and so could never subject it to the type of self-correction that is found in this history of reason's realization. Here natural language is fundamental: it is what distinguishes us, with social and rational lives, from species with *merely* biological lives. Language establishes a discontinuity between the merely biological and the social and cultural (Hegel would say "spiritual") in a way parallel to the way that the structures and processes of the organic world demarcate it from the merely physical and chemical processes that life relies upon. But merely Wittgensteinian language games with publically followable rules are not enough for the story of the *realization* of reason. Ways must be discovered to allow some kind of evaluative reflection on mere language games: the type of second-order reflection is facilitated by forms of writing that can extend language games and reinterpret the type of objects that talking allows us to engage with. In the context of ancient Greece, this was provided by the diagrammatic practices constitutive of Greek geometry.

Macbeth points to the commonly encountered anachronisms found when we try to understand Greek practices of reason from the standpoint of the present, influenced as we have been by the transformations of the early modern period. The contrast can be made, for example, between Euclidean diagrams with the use to which diagrams were put by Euler in the 18th century. Eulerian diagrams, it might be said, are post-Cartesian, and treat lines or areas as collections of points that each *instantiate* something general represented by the line or the area. They are ultimately conceived as ways of understanding relations among properties by way of understanding the relations among individuals that instantiate those properties. Euclidean diagrams are quite different, however. They were developed to enable a mathematically tractable

way of reasoning directly about generals. Importantly, diagrams are not *natural* signs that allow "picture proofs", nor can Euclid's definitions, postulations and common notions be treated as axioms from which other elements can be deduced nor are foundational truths. These elements function as a propaedeutic to the practice of geometry by allowing diagrams to be read *as* meaningful.

In particular, Macbeth reads the systems of proofs using Euclidean diagrams in the way that others (for example, John Corcoran) have read Aristotle's syllogistic proofs, that is, as a system of natural deduction. Thus common notions, postulates and the like function as *inference rules* rather than axioms from which other truths are derived. There is no stage of "universal instantiation" in Euclid's proofs. They are, like Aristotelian syllogisms, "general throughout, without being quantificationally general" (80). A drawn circle functions more as a Peircean icon within his system of signs rather than as a particular instance of the universal *circle as such*. As she puts it, a Euclidean diagram does not instantiate content but formulates it. "Constructions (of diagrams) encode or formulate information about the essential natures of geometrical entities in a form that is usable in diagrammatic reasoning" (105). Here she utilizes Kant's idea of a diagram's capacity to *exhibit* (*darstellen*) conceptual relations, a notion that Kant contrasted with that of merely *representing* (*vorstellen*) particulars.

For Macbeth's project it is important to retrieve the original significance of the diagrammatic in Greek geometry, because if we misunderstand that practice and read back into it the transformation that mathematics underwent with the work of Descartes, we will also misunderstand Frege's *Begriffschrift* and the distinctly *Greek* complexion of his idea of science. We will then treat the form of the *Begriffschrift* as a discardable oddity, able to be replaced by the form of symbolic representation we know today. But if we are not to read the *Begriffschrift* as an early odd form of quantificational logic, how are we to read it?

At this point Macbeth's narrative once more seems to parallel Hegel's, or at least the re-telling of the Hegelian narrative in the work of Robert Brandom. Brandom thinks that Hegel had got beyond the limitations of the Kantian "understanding" by treating concepts as the hinges of inferences. Macbeth has criticisms of many of the elements of Brandom's inferentialist project, and Brandom himself seems very

resistant to any non-discursive or "diagrammatic" dimension to reason. Nevertheless, Macbeth seems to follow Brandom's "expressivist" and "inferentialist" path at this point. On an inferentialist reading of concepts that goes back to the work of Wilfrid Sellars, all semantic content of a concept is regarded as coming from the inferential relations within which judgments containing that concept are related to other judgments, relations of implication or exclusion. Like Macbeth, Brandom finds the origins of a fully inferentialist account of concepts in the early Frege, rather than in his later work which seems more open to set-theoretical interpretations. For Macbeth, Frege's strange conditional diagrams in the *Begriffschrift* are to be understood as exhibiting such inferential relationships between the concepts involved, a function that is lost in the conventional set-theoretical interpretation of "his" quantification theory.

It is difficult to do justice to this long, challenging and intensely argued book in this short space. Moreover, the job of any single reviewer is especially difficult given Macbeth's enviable range of expertise over a wide variety of areas in mathematics and other sciences, and both current philosophy and the history of philosophy. In terms of the many specific theses raised in the areas of logic, philosophy of logic, mathematics and the philosophy of mathematics alone, Macbeth's book deserves the careful study of a variety of specialists. Here I will confine my comments to some of the most general aspects of the project. Like Brandom's *Making It Explicit* (1994), and, in a certain respect, like Richard Rorty's *Philosophy and the Mirror of Nature* (1979) before it, *Realizing Reason* presents a highly imaginative and well-argued re-reading of the history of philosophy that brings out unexpected relationships that allow us to see individual episodes and movements in very different ways. (In its terms, it *exhibits* these episodes in the way a good Euclidean diagram exhibits the conceptual relations at the heart of the Greek approach to reason.) At the very least, it challenges the tendency of the philosophical profession to become self-satisfied with its exclusionary "Kuhnian normal science" self-descriptions. When working at this level of generality and with this degree of departure from "normal science" the risks and the stakes are equally high, but whether or not a reader is convinced by Macbeth's narrative, it is difficult to imagine their understanding of philosophy as not being both challenged and enriched by it.

In terms of *risks*, I will particularly mention Brandom and, especially, Rorty in this context as they both signal, I believe, some of the difficulties to be encountered within the generally Sellarsian terrain on which Macbeth's account unfolds. Rorty had been happy to take on board the "historicist" dimension of Hegel's narrative *via* Sellars's idea of the self-correcting nature of reason, but was keen to dissociate his Hegel from any "achievement" thesis—the thesis that we have somehow successfully reached the end of this of the realization of reason. In particular, Rorty thought that the kind of Wittgenstein–Sellars approach to language games that rejected any foundationalist epistemology also undermined the traditional realist project of philosophy's attempt to cut reality "at the joints". In particular, the Sellarsian idea of language accounted for "word–word" relations but rejected the representationalist idea of "word-world" relations—a feature at war with Sellars's own realism. Minus this representational dimension of language, the idea of our theories "getting reality right" in some final or definitive way was, he thought, meaningless.

Macbeth is clearly critical of the Rortian reading of Sellars's type of philosophizing, and her criticisms of Brandom suggest that she thinks of Brandom as himself unwittingly unable to secure any real idea of the objectivity of knowledge claims *beyond* the idea of that of socially recognized entitlement (effectively, reducing truth to justification) in a way that would differentiate him from Rorty (26). In contrast she wants to retain the "word-world" relations of reference, and the idea of our direct epistemic connection to the world in perception, and to achieve this she turns to a variation of John McDowell's approach to perception. I agree that a necessary correction to the approach of Rorty and Brandom is needed here, but Macbeth's suggestions seem to lead in two contrary directions.

On the one hand, Macbeth appears to want to reject the idea of the end of this process of the full realization of reason as providing anything like the traditional "God-eye view" of the world that is typical of the early modern conception of science. Among other things, this seems signaled by the title of her final chapter, "The View From Here". On the other hand, she seems to want to hold onto essential elements of the ancient view of our perceptive powers as able to "take in things as they actually are", things that are themselves "mind-independent". This is a power *within* our natures, as Aristotle held, but, as McDowell has argued, we here have to appeal here

to *second* nature—that in us that has, courtesy of our linguistic capacity, been internalized from the cultural traditions to which we belong. It is this that allows us to know "not only how things show up to one here and now but also, inferentially, how things actually are" (43). But how does the fallibilist (and Macbeth is a fallibilist even about mathematics and logic), who knows that the *correcting* view achieved inferentially might *also* turn out to be a similarly contextual "showing up" of things, be sure of this distinction between "how things show up to one here and now" and "how things actually are"? And does not this cast doubt on the "achievement thesis" in the story of the realization of reason? While I think Macbeth is right that following the path of Wittgenstein and Sellars need not end up in Rortian skepticism, I find the place at which she does end up ambiguous. Because her narrative shadows Hegel's at so many points, to help clarify this point I will conclude with a suggestion that comes from *one* way of reading Hegel's *equally ambiguous* notion of "absolute knowing".

The "Objective Logic" constituting the first two books of Hegel's *Science of Logic* concludes with the thought determination of "actuality". This is, as it were, the mature form of the concept of "being" with the logic starts. We might think that for Hegel "actuality" simply means what ultimately exists, the world "out there", *independent* of our perspectival take on it—the world as it is "in itself". The traditional metaphysical reading of Hegel would agree: Hegel here alludes to the realm that Kant suggested we cannot know. But aspects of Hegel's treatment of actuality suggests an alternative interpretation, one *closer to* Kant's more modest stance on the nature of metaphysical knowledge. To capture this alternative we might invoke a dispute in contemporary modal metaphysics over the nature of actuality itself.

With Kripke's revival of Leibniz's way of thinking of possibility (the proposition *p* is possible if *p* is true in some possible world), debate broke out over how to think of possible worlds. David Lewis famously took these as real, concrete alternatives to our *own* world, the actual world (Lewis 1986). In contrast, Robert Stalnaker has treated possibilities as *abstracta*—possible alternative *states* or *properties* of this, the actual, world. Hegel's treatment of actuality in the *Science of Logic* seems much closer to Stalnaker's "actualism" than Lewis's "possibilism" here.

Moreover, Hegel's treatment of judgment forms in the following "Subjective Logic" seems to suggest a further alignment with Stalnaker's actualism.

Thus in his treatment of judgments in the *Science of Logic*'s Book 3, the "Subjective Logic", Hegel clearly distinguishes between two conceptions of predication that, he thinks, are operating within two different types of judgment. Judgments based on immediate perceptual responses, of the type taken as basic by the Greeks, are expressed in a type of judgment in which predication is understood as "inherence" of the predicate in the subject (he calls them judgments of existence, or "Dasein"), while in reflective judgments of the critical "Copernican" type, where *conditions of judging* are taken into account, predication is understood as "subsumption" of the subject *under* the predicate (Hegel 2010, 557 & 570). There is clearly a type of diagrammatical or map-like quality to the former "de re" judgment types, where the relation of subject to predicate is understood as *isomorphic* with the relation of a substance to some contingent property instance belonging to or "inhering" in it, but this is not obvious in the latter "de dicto" ones.

The type of *pre-critical de re* perceptual judgments, taken as fundamental by the Greeks—judgments in which things "show up" in the "here and now"—are clearly not "objective" in the modern sense. They express "essentially indexical" or "subject-locating" beliefs and are, in *this* sense, "subject-dependent". That is, such elements are akin to those subject-relative features of the environment that Macbeth treats as Gibsonian "affordances". For Hegel, it is the job of the *reflective* "subsumptive" judgments to express what Macbeth refers to as "second thoughts", that is, higher-order thoughts that attempt to eliminate the specific subject-locating elements of the former judgments. Kant's imagery of the "Copernican move" appears to locate the thinker of such "second thoughts" somewhere *other than* on the earth's surface, as it is this view that enables the appreciation of the effect of the movement of the earth on the experience of any terrestrially located observer. But Hegel seems to be concerned with integrating these opposed, "terrestrially" and "celestially" located forms of thought. If this is so, we might expect that *something* of the "essentially indexical" or "subject-locating" nature of immediate perceptual belief to be maintained ("*aufgehoben*") within the higher thought, while something of it is

"negated", and, eventually, something of this to be included in our knowledge of "actuality".[1]

For his part, Stalnaker stresses the importance of subject-locating beliefs as what distinguishes our knowledge of actuality from that of *mere possibility* (there are no "possible things" which could make merely possibly true propositions true or false—these latter must be thought of as *entirely general* with no "witnesses"). Thus Stalnaker thinks we must get the semantic resources for thinking about possibility *from* the objects, properties and relations encountered *in the actual* world—the things disclosed to us in our "subject-locating" beliefs.

If this comparison is along the right lines, and Hegel is akin to the Stalnakerian *actualist*, Hegel has redefined what it would be to "realize reason"—the goal of philosophy or metaphysics—from the way it was thought of in Greek times when philosophy was thought of as the investigation of what *necessarily* exists, or, in the recently revised Leibnizian jargon, of what exists in *all possible worlds*. Rather, I suggest, Hegel takes the goal of philosophy as a comprehensive knowledge of *this concrete actual world*, a world which *necessarily* includes us and our actual cognitive history. This world is not merely one of a *plurality* of Lewisian possible worlds that constitutes some greater reality, and this in turn seems to undercut the aspiration to know the world as it is *independent of our existence within it*.

As I have tried to indicate, elements of Macbeth's account are, I think, suggestive of this "actualist" project, but such a project seems, from the viewpoint of metaphysics, more *modest* and *closer to Kant's* than the one that at other points she seems to proclaim, a project closer to the one *traditionally* ascribed to Hegel, as well as closer to the traditional *pre-Kantian* aspiration to know the world as it is "in itself" and *independently* of us.[2] Moreover, in particular, she also tends to portray the mathematical realm itself as the realm of possibility, suggesting the non-actualist (possibilist) view of a realm of objectively knowable possibilities of which *the physical world* is just one part.

With this consideration, we effectively end on a question that was central to the modern conception of philosophy: the actual relation between metaphysics and

mathematics—a question that Macbeth has again put back on the agenda. Macbeth has posed the question of the consequences for metaphysics of a revolutionary form of contemporary mathematics, the significance of which has hitherto not (apart from Frege) been fully appreciated. In *his* system, Hegel tried to show the consequences of his logic for "real philosophy"—the consequences it had for the concrete world conceived as a world with physical and spiritual (we might say, historical, social, cultural and psychological) dimensions. In her final chapter, Macbeth broaches on the complex question of the relation of mathematics to "real philosophy" in the form of a philosophy of physics, but we will have to await further reflections on its consequences for any broader understanding of the world and our place in it.

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[1] Hegel's concept of "Aufheben" famously contains both dimensions of preservation and negation.

[2] On this reading, Hegel has transposed Kant's revolutionary thought from an epistemological to a modal key.

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