

The Diamond Net: Metaphysics, Grammar, Ontologies

David Kolb, Charles A. Dana Professor Emeritus of Philosophy, Bates College

Abstract: *In the introduction to his philosophy of nature, Hegel speaks of metaphysics as "the entire range of the universal determinations of thought, as it were the diamond net into which everything is brought and thereby first made intelligible. Every educated consciousness has its metaphysics, an instinctive way of thinking". Both Wittgenstein and Hegel see our many languages and forms of life constituted by different diamond nets of categories/grammars. I argue that both Wittgenstein and Hegel take a non-reductive attitude toward this plurality of local ontologies, but that they disagree about what that plurality implies for history and philosophy. Their disagreements come in part from their differing choice of examples, influenced by atomism and holism. Even more, their disagreements stem from divergent notions about the structure and mode of being of those diamond nets. During the discussion, I distinguish three uses of the word "ontology", and I ask each thinker about what might improve the other's philosophical project.*

Invitation

I have invited Wittgenstein and Hegel to walk with me for a while. We go to a hilltop overlooking the disputed land of ontology and metaphysics, with its famous baroque castles in the air and its scenic historic ruins visited by busloads of students every year, as well as the land's sleek modern factories and austere monuments.

This may seem an unlikely place to bring Hegel and Wittgenstein together. Hegel feels at home with the fantastic architectures and bizarre constructions in the land of ontology. After all, he wrote one of the earliest guide books for those visiting the area, as well a handbook for those seeking citizenship there. But Wittgenstein finds the area distasteful, a land of traps and illusions. He would prefer a simplified house in Vienna. Or an ordinary flat in England, or a friend's house in America. There, in October 1949, conversing with O. K. Bouwsma, Wittgenstein praised the logical work of Bertrand Russell and Alfred North Whitehead, but he scorned Whitehead's later move into ontology and metaphysics. Bouwsma recounts that "Wittgenstein said Whitehead was good once, before he became a high priest [and] a charlatan." (Bouwsma 1986: p.49)

We know that Wittgenstein could wield contempt like a sword, often wounding himself. Hegel's grand schemes should also earn that contempt. Yet on this walk together I will try to persuade the two thinkers that they share certain projects, even though their paths do diverge.

Our Diamond Nets

I have structured our discussion using an excerpt from Hegel's introduction to his philosophy of nature:

Metaphysics is nothing else but the entire range of the universal determinations of thought, as it were the diamond net into which everything is brought and thereby first made intelligible. Every educated consciousness has its metaphysics, an instinctive way of thinking, the absolute power within us of which we become master only when we make it in turn the object of our knowledge. Philosophy in general has, as philosophy, other categories than those of the ordinary consciousness: all education reduces to the distinction of categories. All revolutions, in the sciences no less than in world history, originate solely from the fact that spirit, in order to understand and comprehend itself with a view to possessing itself, has changed its categories, comprehending itself more truly, more deeply, more intimately, and more in unity with itself. (EPN 1830: ¶ 246 A)

Both Wittgenstein and Hegel observe the nets of categories that we use to structure our experience of the world. Diamond-like, transparent, are these Kant's categories? Or those of Hegel's Logic? Yes, Hegel is aiming that way, but no, in this paragraph he has other categories in mind. In the text surrounding the excerpt above Hegel draws a contrast between the categories used in the physics of his day and the categories used in the philosophy of nature. He is talking about the nets used to organize experience, even when those categories lack the pure diamond character of his logic.

Wittgenstein would not speak about diamond nets, but he does speak of grammars and their nets of internally related concepts. He distinguishes between statements showing internal relations and statements expressing empirical relations and causal connections. (See Mácha 2015.)

Furthermore, if "every educated consciousness has its metaphysics", then there are *many* diamond nets. Both Hegel and Wittgenstein describe the nets of concepts and practices they find in the world. These nets can be, as Hegel says, "instinctive", that is, not constructed self-consciously.

In his philosophy of nature and spirit Hegel describes organisms' growing abilities to discriminate, and their many stages of developing self-awareness. Then Hegel finds many diamond nets in history and politics and art, and he tries to understand and master them.

Wittgenstein for his part finds multiple language games, many grammatical nets in our forms of life, most not consciously planned. We must learn not to be mastered by them or by the pictures they suggest.

Local Ontologies

These diamond nets are often referred to these days as local ontologies. We can ask about the ontology of a database, or of a computer game, or of a bureaucratic procedure. What types of entities are taken as significant, and what are their relationships, connections, and the rules for moves allowed with them? What is the repertory of objects to be discussed? how are they to be connected or used or played with?

Such diamond net allow us to classify objects, or make moves in a game, or a study a social phenomenon. For instance: *Slab, brick, carry, put on the pile. / The Rook moves along the board in straight lines forward or sideways. / Temperature, humidity, and barometric readings are recorded hourly in the database, correlated with the velocity and direction of the wind. / The nineteenth-century novels on this list will be analyzed in terms of the connections between their characters' actions and locations where those actions occur.*

Ontologies, in this sense, develop naturally, but also by planning and regimentation. There are many ontologies. They do not need to compete with one another, although they can be rivals, as when we choose among different databases for analyzing economic history, or among rival conventions for playing a game of bridge, or different constitutions for a new city charter. These ontologies are pragmatic in the sense that they are tried and tested in our interactions with the world. They are not philosophically self-aware or certified. Nor do they need to be.

Universal Ontology

To help clarify the different ways Hegel and Wittgenstein deal with the nets of categories and rules that structure language in action, I want to link the older usage of the word *ontology* in philosophy with its newer usage in information sciences.

In philosophy, *ontology* names a very old investigation, though the word itself was not applied to that investigation until later on. In the 300s BCE, Aristotle's students collected his essays into groups. The first essay in the group on logic and argument was called *Categories*. There Aristotle offered a list of the basic kinds of entities we can speak about.¹

1 Scholars disagree about the exact method Aristotle employed, and about its results. See the article "Aristotle's Categories" in the Stanford Encyclopedia of Philosophy. The word *category* comes from the Greek *kategoriai*, from the verb *kate-goreuein*. This verb's original meaning was *to accuse* or *to make a charge in public* (*kata* against, *agora* public square). It came to mean *to make a statement, to assert a fact about something*. So a list of *categories* would contain the general kinds of facts which could be asserted, and/or the kinds of entities that could have facts asserted about them.

In another set of essays Aristotle took the list from the *Categories* and studied the basic features that any existing being must possess in order to be real. Aristotle called this investigation *First Philosophy*, but his students named these essays *Metaphysics*. The usual explanation is that they placed those essays *after* a group of essays on changes and processes in the material world, a group they called *Physics* (from *physika*, natural things). But besides meaning *after*, the Greek *meta* can also mean *beyond*. So whether or not it was intended, *metaphysics* soon took on the meaning *beyond the Physics*, because First Philosophy studied the basic properties for any being, material or immaterial, concrete or abstract. Recently given a New Age twist, this meaning which leads to the many exotic books found on the Metaphysics shelves in book stores, which is a reason that often philosophers today use the word *ontology* as a safer term for Aristotle's *first philosophy* in its modern guises.

The word *Ontology* appeared in late medieval times and first appeared in English in the 1500s. It combines the Greek words for being (*onto*) and study (*logos*) to name the study of beings as such, the study of the basic qualities of any entity.

Ontology then came to designate not only the investigation but also the doctrines developed in that investigation. For instance, Descartes and Newton and Leibniz argued about the laws of motion, and historians noticed how each thinker was relying on a different notion of what it meant to count something as real. They had different *ontologies*.

Through the years, philosophers tried many different methods in their search for the basic properties shared by all entities. They generalized from everyday observation and the grammar of their languages. They searched their minds for what seemed to them intuitively "first" or most basic concepts. They studied the sciences of their day.

Then in 1774 Immanuel Kant reformulated the old question "what are the properties any being must have in order to be real?" into the question "what are the categories any language must use in order to successfully designate and describe an entity?" What necessary basic categories of thought and actions of synthesis were required for a mind to assert a statement about an object? Kant argued for a particular list of basic categories and mental actions. Throughout the nineteenth century his successors worked on his lists and his theory of mental activity. Some sought to bolster his arguments for one universal set of categories while others argued for historically varying lists of categories.

Meanwhile, logicians were developing new formalized tools and notations that allowed them to systematize the sprawling patterns of logical argument. They then realized that their search for the most basic and economical logical concepts and operations paralleled Kant's search for the necessary structures of all thought.

For information science's current use of the word *ontology*, the decisive turn came in the 1930s when Stanislaw Leśniewski and other Polish logicians were constructing systems of axioms, definitions, and rules that they hoped would provide the foundation for clarifying and analyzing any language. They named their set of highest level categories and rules *Ontology*. These rules prescribed what objects were and how they could be spoken about.

So *ontology* came to designate systems of rules that enable classification and communication. With computer programming based on logical tools, information scientists began using *ontology* to describe systems for analyzing and recording information. New ranges of words begin to be used with *ontology*. Using Google's Ngram tool, you can track the growth growth of phrases such as "ontology mapping", "ontology and the semantic web", "ontological reduction:

Reducing Local Ontologies

The dispute among Kant's successors about whether there was one universal or historically diverse sets of categories then reappeared in disputes over universal versus local ontologies. Given their ability to construct many different logical systems, logicians often accepted a multiplicity of ontologies. But many philosophers were not so sure. Once the scientific revolution challenged the ultimacy of the objects of ordinary perception, local vocabularies began to be questioned. It became important for philosophers to figure out "what was real". This mode of doing *ontology* was enriched with 20th century tools of linguistic and logical analysis, theories of reference, model theory, and the like. Nowadays for pursuing materialist or naturalistic goals the basic set of entities is usually supposed to be provided by the latest and best science, as both Quine and Sellars argue in their different ways. There are whole libraries filled with disputes about how to perform these reductions. Wittgenstein, however, refuses to play that game.

Perhaps surprisingly, Hegel too refuses the game of reductionism. "But wait a minute!" you may object, "isn't Hegel the Complete Reductionist? Doesn't he claim that there is only one truly real entity: *Geist*, spirit?" Yes, at times he does say things like that, but he does not mean this as a theory of reductionist reference. You cannot understand what he is saying until you understand spirit's mode of existence.

For Hegel does not think spirit exists as an immediate present object, a simple factual presence. He argues that any simple factual presence, on any level, results from complex internal mediations and ongoing interactions. Spirit is not a block entity, a Big Fact; not a Bradleyan absolute. It is an ongoing self-reflective process.

A process *in what*, we might ask, but Hegel argues strenuously that that is precisely the wrong question. One of the goals of his *Phenomenology* and *Logic* is to eliminate any possibility of an external view of spirit, as if it were an object we study rather than the act and structure of studying itself. Is that so different from Wittgenstein's refusal to let philosophy make absolute ontological claims? Let us see. To do so, we need to return to that first and oldest use of *ontology*.

Reality as such

That study Aristotle called *first philosophy* examines being qua being (*to on he on*). It seeks categories that can be used to study the entities revealed in any local language or form of life. Aristotle has a set of conceptual tools. These include his list of the basic categories of entities (substance, quantity, quality, and relation), plus his concepts of the four causes, matter and form, and above all his notions of actuality and potentiality. Using these he can analyze historical change, biological reproduction, the writing of poetry, the growth of cities and political structures.

He describes the being of entities presented on many different levels; he does not reduce everything to one single level. So, for instance, attacking Plato, he does not reduce Plato's universal Forms to nominalist collections of individuals; instead he argues that the mode of being of Plato's forms, the way they are supposed to exist, renders them powerless to achieve the functions that Plato thought demanded their existence. When he discusses pre-Socratic theories of the nature of matter, he argues that the modes of being for their proposed basic entities are not capable of accounting for the orderly regular actualization of natural processes.

Hegel too does ontology in this Aristotelian mode. He is not trying to produce The Ultimate List of The Truly Basic Entities. Hegel's *Logic* does not produce an ontology in the reductionist sense, but rather a set of categories that can be used to analyze and clarify any local ontology.

Hegel's toolbox includes the categories developed in the third section of his logic, the doctrine of the concept. These involve multiple permutations and involuted combinations of the universal/particular/individual aspects of things, keyed to the traditional logical terms of judgments and syllogisms.

He uses these categories to analyze space and time, the solar system, the types of rocks, biological processes, the levels of subjectivity, the different branches of government, and on and on, including a self-reflective account of the genesis of these tools themselves.

This crystalline sequence of categories does not precipitate out into a final reductive list; it culminates in a self-aware motion of categories which can be used to criticize or to locate at an appropriate level any local categories. None are denied, but they are put in their place.

Local ontologies get swept up into the motion but then are left where they are. Different local ontologies continue to function but within an awareness of their...limitations?...locations?: Neither of those terms is quite correct because they suggest some kind of static whole where each local ontology is a piece in a jigsaw puzzle. Hegel's proclaimed Absolute Knowledge and the Absolute Idea provide no list of The Final Objects, instead they bring a self comprehension of the process of developing local ontologies within the activity of spirit, while revealing the form of that activity.

Hegel usually lets local ontologies be, noting their inadequacies. However, if he sees someone trying to draw from inadequate categories practical conclusions in ethics, art, politics or education, then Hegel applies corrections. To criticize, say, a proposal about the legislature of a city, he will do what Aristotle did, namely, present the concepts from the rival theory, show their inadequacies and inner tensions, then provide a better recommendation based on his own account of how the universal/particular/individual aspects of things mutually constitute each other.. And if he thinks a practical issue is serious enough he will criticize the rival theory in a contemptuous tone that Wittgenstein would recognize.

Mastering the Nets

Both Hegel and Wittgenstein want us to become aware of our diamond nets, our instinctive ways of thinking, and "become master ... when we make [them] in turn the object of our knowledge". They both want us to find a new freedom with our ways of thinking and speaking, even as we realize how we are constituted by them. Diamond nets are not infinitely pliable. They have their own constraints. We become their masters only when we realize that they are not our arbitrary creations. The master potter knows his clay and his kiln, the sculptor knows what marble can and cannot do.

Wittgenstein wants us to become master craftsmen understanding what our language can and cannot do, what changes we can and cannot make. Hegel too hopes for such sensitive awareness of our situation and concepts, though he pictures this awareness arising through unique, purer experiences of thought.

Hegel conducts exercises in studying and manipulating ontological concepts, feeling out their connections and movements, their flexibilities and their resistances, coming to understand the pattern of movement that is their mode of being.

So when Hegel looks out over the fabled land of metaphysics he sees antique constructions whose architects thought they were solid but whose structures were riven with inner tensions. But he also perceives how the architects' tools were being refined.

If Hegel can plan the right path among those castles and ruins, and properly reveal the architectural changes in each design, a traveler on that path can come to see how the diamond nets were growing subtler, and, upon reaching the final palace, the traveler will find in its corridors and rooms the self-comprehension of the traveler's own path and the principles behind its design.

We could perhaps speak of these tortuous explorations as a kind of philosophical *therapy*. Hegel sets us exercises in working through negativity, accepting change, reconciling us with our situation, freeing us from constricting modes of thought and action. One-sided questions get pushed aside, dualities are transcended. Just as therapy is supposed to do. Hegel's desired effect resembles Wittgenstein's linguistic therapy in so far as it dispels illusion, turning us away from fruitless quests that we think we must follow because we are under the spell of inadequate categories.

Objections!

At this point in our walk together Wittgenstein can hold silent no longer. He erupts: "Kolb, No! I protest! I don't accept your parallels. Hegel and I see the history of ontology and metaphysics very differently. He may see an optimistic progress, But I see a wasteland littered with wrecked projects and delusive monuments, with mazes of confusion amid the ruins."

"And then, you see him trying to offer some total vision of spirit that can encompass all that diverse wreckage! But that total vision of spirit is just another trap, trying to domesticate my ideas and lock my philosophical practice in a systematic cage!

"And even worse, to continue the insults, you have the nerve to try to make my philosophical therapy and Hegel's dialectical manipulations sound like they have the same goal. No! You miss the crucial difference: I lead the fly out of the fly-bottle. Hegel constructs a more intricate bottle to more deeply imprison the fly. True therapy is to let the fly go free."

Before I can reply to this outburst, Hegel grumbles: "Wittgenstein, what kind of freedom are you offering the fly? The open space outside any bottle still has its own geometry and curvature. Our logical space is finite and closes in upon itself; true freedom consists in moving with the natural curves of that space, not in some illusory infinite openness where all directions of flight are arbitrary and meaningless."

Basic Disagreements

Wittgenstein begins a heated reply about geometry, but I interject "Gentlemen, calm down, be patient. I suggest that your disagreements have two deep roots: first, you choose very different sorts of examples, and second, you have different notions about the weave of the diamond nets on which your examples are strung."

They turn on me for explanation, and I say: "Wittgenstein, your examples tend to be simple language games: Slab, Promise, and so on. I know that these are deliberately simplified and meant to show how to approach more complex modes of living and speaking. But they set the tone. Your simple language games echo the atomic simple objects of your *Tractatus*, each independent and self-sufficient. You suggest a picture of simple language games, each more or less complete, that get assembled into more complex social roles and forms of life."

To clarify my point, I recall how when I taught at the University of Chicago: Paul Ricoeur and I led a number of courses together on Hegel and on Nietzsche. Once, when we were discussing the then current analytic philosophy of action by Donald Davidson and others, Paul argued that those philosophers had chosen the wrong kind of examples. They sought to understand the nature of intentional actions by focusing on so-called *basic actions* such as raising one's arm. Paul argued that such examples were impoverished. Philosophers of action should have taken as their examples full-bodied episodes of action such as starting the French Revolution, or living in the feudal system.

Those examples are movements within what Hegel called shapes of spirit. These are not wholes assembled out of already individualized components. They are complex unities inside of which their component sub-actions achieve their individuality. For Hegel a *small* example might be the operations of a national legislature or a city court system.

"So," I tell Hegel and Wittgenstein, "you speak at cross purposes when you cite concrete examples of diamond nets."

"Furthermore, I add, "Your deepest disagreement is that Hegel affirms and Wittgenstein denies that the weaving of those diamond nets produces, and depends on, internal tensions and contradictions."

Hegel claims that these inner tensions have two sources. The first is that the individual diamonds in the net are not independent units. They depend on their net of connections. This Wittgenstein could agree with, given his notion of internal relations. But for Hegel there is more; the diamond net is not a static framework of fixed relationships. Apparently simple categories, such as form versus content, individual versus universal, thing versus qualities, contain twists and mediations.

Even and especially the most abstract ontological categories, such as *being, unity, thing*, achieve their apparent simplicity only within ongoing mediations through other categories. In the first part of Hegel's logic categories that are supposed to be rigidly separated keep slipping over into something else. In the second part, categories that are supposed to be locked in clear dualities can't maintain their separations. In the third part, categories come in triads that refuse to settle into a clear hierarchy or primacy; there is no "first": each member is both primary and mediated. These shifts are not a run up to an eventual static net; these shifts and mediations are the way in which the categories dynamically exist.

Hegel's second source of a diamond net's internal tensions is a fold or doubling *within* a shape of spirit, bringing change and revolutions. In the Introduction to his *Phenomenology*, Hegel claims that any form of consciousness awareness facing an object includes an implicit self-comprehension of that intended object and what consciousness must do to reach that object. Later he argues that forms of consciousness concretely exist only within social shapes of spirit. And those shapes depend on the same inner doubling, a self-comprehension of the shape's inner project of a social world and its mode of attaining mutual recognition. This twists an inner fold along which a shape of spirit can fracture when it fails to find itself at home in the world it projects.

Changes and Revolutions

Hegel and Wittgenstein might agree that "all education (*Bildung*) reduces to the distinction of categories", as long as the associated practices were counted as well. Wittgenstein would add, though, that for him, our grammars, for instance, the grammar of the get me a slab game, or of our talk about colors, or the rules of chess, have *as diamond nets* no contradictions, no *internal* pressure for change. But equally, he insists that they *can* produce contradictions and confusions if we misunderstand what grammar is, or confuse reports on grammar with empirical reports.

Furthermore, he insists that *in use* a given diamond net may prove unsatisfactory. Our color talk could prove inadequate for discussing a painting by Caravaggio. Or, while the rules of chess contain no inner tension, playing actual games of chess might not go as we would like. If that happens, we can change the game. Perhaps, the move called *castling*, allowing King and Rook to be moved at the same time, was introduced to speed up the game or provide more excitement. Yet Wittgenstein asserts that there is no single built in self-understanding or direction to move. Quite other rules could have been introduced and the game could have been altered it in many different creative ways.

Hegel insists that the problem goes deeper. The diamond nets within shapes of spirit make distinctions that cannot be maintained and define unions that cannot be achieved, not just because the world is recalcitrant, but because at heart the net's concepts secretly depend upon and move into one another.

The owl of Minerva doesn't suddenly wake up and show us the inadequacies of our concepts. Structural changes do not start from armchair reflection. Change comes when internal tensions reveal the inadequacies of a structure of lived experience. In the dialectic of master and slave, it is the productive labor of the slave that provides in practice a new kind of self that then can be philosophically conceptualized.

For instance, later in his *Phenomenology* Hegel analyzes the structure of a post-feudal absolute monarch's royal court, such as France's *ancien régime*. The courtier's life brings dependence, struggle for recognition, constant demands for elegance and wit, yet no substantive social goals. This creates in practice a new kind of unrooted, active but pointless ironic self. Combined with its cousin, an earnest enlightened self fighting superstition, a new social role is created, the revolutionary demand for absolute freedom.²

It is not that the *ancien régime* for some contingent reason couldn't manage to deliver the identities and self-affirmations it promised. Its had a social grammar that defined what is to count as being a recognized and affirmed individual in that particular community. But that grammar's diamond net was woven out of particular versions of more abstract categories: form and content, individual and society, freedom and duty. Taken in themselves these categories are not static abstract structures contemplated by a pure eye. They are schemes for active thinking grasping together other active graspings. They exist in the act of bringing together opposed subsidiary categories.

2 The section of the *Phenomenology* referred to here, *Die sich entfremdete Geist: die Bildung*, contains many more layered transitions than this short summary. (PG VI. B (Miller paragraphs 484-581))

Their internal tensions are revealed when individuals are unable to verify themselves in the community. The old shape of spirit fails to produce its proposed type of mutually recognized individuals at home in their world. The outline of that failure prefigures a new shape or spirit. In the process, a social grammar that defined certain key oppositions mutates into a new social grammar with new oppositions, each side of which includes in tension elements of both sides of the older oppositions. Hegel calls this *determinate negation*. It's crucial to the necessity of his dialectic and it's one of the more valuable (and more vulnerable) parts of his philosophy.

Wittgenstein's examples, on the other hand, have less historical depth and provide no intermediate-sized social or historical concepts to guide changes. So Jean-François Lyotard can read Wittgenstein as claiming that the creation of new languages games and forms of life happens through discontinuous creative leaps with no guidance except a sense of value that cannot be put into words.³

At this point in our discussion Hegel wants to bring back his comment about the natural geometry and curvature of logical space, with its implications for history and liberation.

But I break off our discussion. For we are here up against another fundamental issue, the status of ontological and categorial/grammatical analysis: How do the contours and movements of thought and language relate to those of things in the world? That discussion could get very noisy, but I've been implying that Hegel and Wittgenstein may not be as far apart on that issue as so many of their feuding descendants think they must be.

Parting Words

As they part, neither philosopher is happy with my attempts to force them together. But each now understands better what the other was trying to do, although each still disapproves of the other's project. Before they go their separate ways, I ask them to offer a suggestion each thinks might improve *the other's* philosophical project.

3 Lyotard: 1985. Lyotard's is an inadequate reading of Wittgenstein; the essays in Gréve and Macha 2016 make important strides toward clarifying how for Wittgenstein the creation of new language games can be free yet non-arbitrary.

Hegel urges Wittgenstein to look more closely at his examples, at how they live within larger cultural units that question their supposed independence, and at how they contain inner tensions. He suggests Wittgenstein look carefully at what we do when we combine and coordinate language games, and how that combining is not a matter of assembling atomic units.

Wittgenstein in his turn asks Hegel to consider that he might be being led astray by a picture. A picture of a pure self-developing totality of diamond nets. A picture of the transparency of pure thought to itself. A picture of a single great narrative or action being accomplished. He urges the great proponent of history to face up to the historicity of his own philosophy's language and self-understanding.⁴

As they leave. Hegel returns to his post on the bridge between the land of ontology and the world of politics. Wittgenstein returns to his ordinary life. And we ourselves, here and now, go on with our ordinary philosophic lives, trying to find trustworthy paths and adequate shelters amid the mazes of philosophy today, whose paths owe many of their twists to our two recent companions.

References

Bouwsma, Oets Kolk: *Wittgenstein Conversations 1949-1951*, Hackett, 1986.

Grève, Sebastian and Jakub Mácha: *Wittgenstein and the Creativity of Language*, Palgrave Macmillan UK, 2016.

Kolb, David: *The Critique of Pure Modernity: Hegel, Heidegger, and After*, University of Chicago Press, 1987.

Kolb, David: "The Necessities of Hegel's Logics," *Hegel and the Analytic Tradition*, Continuum, 2010: pp.40-60.

Lyotard, Jean-François: *Just Gaming*, translated from *Au Juste* (1979) by Wlad Godzich, University of Minnesota Press, 1985.

4 For explorations of this line of critique, see Kolb: 1987, chap.11, and Kolb: 2010.

Mácha, Jakub: *Wittgenstein on Internal and External Relations: Tracing all the Connections*, Bloomsbury Academic, 2015.