Access Anti-Exceptionalism, and Logical Naturalism Revisited

Abstract: In this paper I revisit the debate about anti-exceptionalism about logic (AEL) in order to motivate a certain kind of logical naturalism. Taking my cue from Martin and Hjortland (2022), I endorse the conception of AEL as a broad cluster of views that reject some traditionally imputed properties according to which logic is exceptional from the other sciences. I argue however that their distinction between "metaphysical" and "epistemological" exceptionalism breaks down: The one position can imply the other, both are ambiguous on their own, and the analysis of metaphysical and epistemological AEL reveals that the AEL debate is based on more fundamental philosophical commitments about logic—realism and anti-realism, monism/pluralism and instrumentalism. Further, if we accept the conception of AEL as tradition rejection, then we should divide its types not via an abstract analysis of the general philosophical subdiscipline in which anti-exceptionalist claims can be classified, but via the types of claimed exceptionalities being rejected. As a therapeutic measure to move to what I regard as the real stakes in the AEL debate, I then introduce a new distinction between kinds of "exceptionalism" and "anti-exceptionalism" along two axes of "access" and "structure"—i.e., logic is or is not exceptional in the kind of access, cognitive or historical, that we have to the content of logic, and logic is or is not exceptional in the kind of structure it bears to other sciences. This "access" framing makes clear the connections our philosophy of science and our philosophy of logic should have with one another on an "anti-exceptionalist" picture. I argue that the notion of "access anti-exceptionalism"—taking seriously the idea that logic is *not* exceptional from other sciences in the kind of access we have to the content of logic—should push us away from logical realism and towards a kind of naturalism about logic. What I mean by "naturalism" is different from Quine, for whom logical naturalism becomes a neo-empiricism in which logical laws are not easily revisable because of their centrality to our web of beliefs, and Penelope Maddy, for whom logical naturalism becomes a de facto acceptance of realist assumptions about the ontological commitments of logical methodologies and again leads to a higher criterion for the revisability of logic. Rather, what I mean by "naturalism" is a difference in the priority of what we do in the philosophy of logic. Rather than begin with a metaphysics of logic—in which we would give an ontology of logical objects or constants or determine the status of logical laws—or with an epistemology of logic—in which we might give an account of the aprioricity or empiricality of logical knowledge or logical facts—*philosophy of logic should begin with a survey of logical systems and theories, both over the history of logic, and in the different parts of the discipline of logic today.* From starting with a historical and disciplinary survey of "logic" we can piece together the functions different logical systems and logical theories play or have played in a broader totality of scientific knowledge. I argue that Catarina Dutilh Novaes's 2022 *The Dialogical Roots of Deduction* is an example of this sort of naturalism. I argue that—in keeping with the earlier principle that our philosophy of science should be connected with our philosophy of logic—this metaphysically deflationary, epistemologically agnostic, naturalistic historical and

disciplinary functionalism about logic has certain broad affinities with movements in the philosophy of science—with the approaches of Thomas Kuhn, Imre Lakatos, Marburg neo-Kantianism such as the philosophy of mathematics of Ernst Cassirer, and contemporary philosophy of mathematical practice. Only once we adopt such a historical and disciplinary survey of logic can we then properly take up the question of the relationship between logic and the sciences—both the fitness of any analogy between the *practice* of logic and the practice of other sciences (and so questions about the access we have to logical content, and the closeness between logical evidence and methodology and the evidence and methodology of other sciences), and the relation between logic-as-discipline and other sciences in a broader economy of scientific knowledge (and so questions about the structure of logic to other sciences, about the fundamentality of logic, its exceptional normativity, and/or exceptional level of inquiry).

Keywords: *anti-exceptionalism, exceptionalism, logical naturalism, history of logic, Benacerraf problem*

1.Introduction

There are some odd features of the debate about "exceptionalism" and "anti-exceptionalism" about logic that has been ongoing since Hjortland (2017), in which he coined the terms and introduced the influential conception of "anti-exceptionalism about logic" (AEL) as an assertion of some kind of continuity between logic and at least some sciences.

First, it has hardly really been a debate: Since the by-now-distant decline of earlier logical positivist orthodoxy and given the contemporary situation of logic as a discipline, in which logicians now frequently work on various non-classical systems, few contemporary philosophers of logic can be identified as full-throated exceptionalists about logic (EL) in the way that Kant, Frege, the Wittgenstein of the *Tractatus*, and Carnap have been identified as traditionally paradigmatic endorsers of EL.[1] Bo Chen has noticed this odd dialogical context and has explored what EL is and might be in a series of articles. Perhaps as a result of the dialogical oddity of what is often framed as a "debate," Hjortland in conjunction with Ben Martin, reframed AEL in (2022) as "tradition rejection" rather than as an assertion of some sort of "continuity" between logic and some sciences (2017).[2]

Secondly, philosophy about AEL has largely not closely engaged with philosophy of science —which is especially odd given the (2017) AEL framing of anti-exceptionalism as about continuity between logic and some other sciences. Rather, "AEL" has been explored mostly as a position within philosophy of logic, conceived as a narrower domain, in which there are a few

[1] Perhaps one exception is Gila Sher, who defends a philosophy of logic with a focus on a neo-Tarskian theory of truth. Cf.

[2] Unfortunately, various more recent articles on AEL continue to focus on Hjortland's "continuity" framing of AEL and therefore both miss a key shift in the dialogical context of the position, and continue under the framing Hjortland acknowledges as ambiguous. E.g.,

basic clusters of different views one might take on questions proper only to philosophy arising directly from metaphysical and epistemological concerns about logic—logical realism and anti-realism, logical monism/pluralism and instrumentalism, and now EL and AEL. On the one hand, this trend is not so exceptional after all in compared to the philosophical subdisciplines that take as their subject matter the other sciences: Much contemporary philosophy of mathematics addresses primarily disputes about mathematical realism, Platonism, conventionalism, and fictionalism, and the implications of different positions of each.[3] In broader philosophy of science, issues are more varied: Philosophical work in philosophy of science is ongoing not only about scientific realism and anti-realism, but about more fine-grained issues that do not focus on broad positions on the metaphysical and epistemological commitments of scientific practice in general.[4] Unfortunately, in this paper I remain discussing "broad" views about the metaphysical and epistemological commitments of logic; my hope is that by doing so, I can help to defuse the temptation to view metaphysics and epistemology as the central task of philosophy of logic.

In the first section of this paper, I will discuss Hjortland (2017) and then Martin and Hjortland (2022). There I will endorse Martin and Hjortland (2022) conception of AEL as tradition rejection. "AEL" is the current name in philosophy of logic for a broad cluster of views that reject traditionally imputed exceptional properties of logic vis-à-vis other sciences. However, I argue that Martin and Hjortland's (2022) division of AEL into clusters of "metaphysical" AEL and "epistemological" AEL is the wrong tack. Insofar as one endorses the conception of AEL as tradition rejection, one should analyze AEL in terms of the kind of exceptional properties being rejected. I claim that these can be broadly divided along how exceptional traditional philosophy of logic might claim logic is vis-à-vis sciences along two axes: that of *access* and *structure*.

In the second section of this paper, I'll go further into this "access" and "structure" division of EL and AEL views. By "access" EL, I mean any view that takes there to be something exceptional about the access one has to the content of logic. I further subdivide access EL into views that one has exceptional *cognitive* access to the content of logic, and views that there's something exceptional about the *historical* access logicians have gained to the "true" logical system or true logical theory. I will argue that we could take in different ways Frege and Kant as EL about cognitive access insofar as we gain access to the content of logic either by access to a

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[3] Although cf. David Corfield's work, particularly *Towards a Philosophy of Real Mathematics*, for a sustained argument that philosophy of mathematics has made a mistake in focusing on broad and fundamental metaphysical and epistemological commitments of mathematics, rather than philosophical questions arising directly from the philosophical concerns of contemporary mathematics itself.

[4] My suspicion is that much of the reason for this sociological difference in what is studied in philosophy of science vs philosophy of mathematics and logic is the by now well-established tradition within analytic philosophy of science of focusing on the history and practice of science. Kuhn, Lakatos, and others raised questions in the 60s about internalism and externalism about scientific theory change, for example, thereby making the historiography of science a live issue for analytic philosophy of science. Similarly, Ian Hacking raised questions about more local issues arising from different kinds of science, or different scientific styles, thereby making the contemporary plurality of scientific methodology a live problem for philosophy of science.

"third realm" of logical laws and constants,[5] or by reflection on the mere form of our thought,[6] and Kant as EL about the historicity of logic.[7] I'll argue that full-throated AEL about the cognitive and historical access one has to the content of logic is incompatible with logical realism. A logical version of the Benacerraf epistemological problem about mathematical realism applies: How one has cognitive access to the content of logic—to logical laws, constants, objects, facts—becomes problematic if one endorses logical realism. Insofar as one is committed to AEL by rejecting claimed exceptionalities of logic in terms of access to it, one cannot be a logical realist anymore, since logical realism will require granting an exceptional kind of "access" to the content of logic.

With this in mind, I'll turn in the third section to elaborating how one is truly committed to AEL concerning access to the content of logic—by embracing what I call "naturalism" about logic. It is unfortunate for my purposes that in philosophy of logic "naturalism" has come to be associated with either Quinean empiricism, Maddy's realism, and the conservativism about the revisability of logical theories (and thereby a kind of EL) both endorse. Rather, I want to reclaim "naturalism" as a philosophical view on logic—one that starts with logic as primarily a *human activity*, and so first examines the different activities known as "logic" today, thereby surveying the different logical systems and theories logicians work on currently, and the history of logic as a human endeavor, thereby surveying the different logical systems and theories that there have been over the whole history of people doing logic or things analogous to logic. I take this sort of "naturalism" to involve a difference in the priority given to different activities within philosophy of logic. Rather than begin with metaphysics concerning properly logical objects or laws, or with epistemology concerning properly logical methodology, one should start with a historical and disciplinary survey of logic—and only then see what metaphysical or epistemological conclusions might result. In other words, I take the proper activity of philosophy of logic to be beginning with what logicians now and in the past *do*, looking at the function different logical systems have played within different configurations of what science has been in different contexts, and then asking questions relevant to these activities—*not* deciding in the abstract the

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[5] Although this is a controversial reading of Frege. Cf. Reck, Erich for a reading of Frege's Platonism that does not take there to be an actual third realm for Frege.

[6] Cf. Alexandra Newton for an argument for a Kantian theory of logical monism that argues that the fundamental conception of logic is of what can be derived from what thoughts can be combined in one consciousness at the same time, i.e., united in the transcendental apperception of consciousness. Sebastian Rodl also seems to hold a similar view in *X* and *Y*. Although I will not argue so here, I think such a conception fails to account for logic *as actually practiced*, logic as a discipline, along with its specific methodologies, and thereby falsifies the complexities of logical practice. Furthermore, such a formalist criterion of what counts as thought in advance seems to me to abstract so far from the actual practice of logicians, scientists, and ordinary reasoners as to be of nearly no practical use: Even if there is a transcendental logic in this Kantian-Rodlian sense, it is of no particular relevance to what usually goes by "philosophy of logic" in particular. Lastly, it is far from clear—especially given the advances in empirical cognitive science—that human reasoners can't or don't, e.g., hold contradictory beliefs; and so, I doubt whether any substantive logical laws can be derived from "transcendental apperception" alone.

[7] Namely, insofar as he thought logic, at least general logic, sprang into the world already complete with Aristotle and therefore, unlike the other sciences, does not have a history in which its foundations were discovered. Even within the Aristotelian syllogistic tradition, however, significant advances were made in what we have no good reason not to call logic—in medieval considerations of semantics in supposition theory, for example.

question of logical realism or anti-realism, or logical monism/pluralism/instrumentalism. Rather, these broader questions can only be posed properly after we account for logic as an activity. I turn to Catarina Dutilh Novaes's 2022 *The Dialogical Roots of Deduction* for an example of the kind of philosophy of logic I am after—a metaphysically and epistemologically agnostic survey of logic in different contexts, and then an attempt to consider what questions arise from that project.

Lastly, I'll argue that this naturalistic survey of logic brings philosophy of logic closer to philosophy of science, which would make sense if one is committed to some form of AEL. Namely, it mirrors the historical turns in philosophy of science undertaken long ago by Kuhn, Lakatos, Marburg neo-Kantians, some continental philosophy of science, and contemporary philosophy of mathematical practice. Only once we adopt such a historical and disciplinary survey of logic can we then properly take up the question of the relationship between logic and the sciences—both the fitness of any analogy between the *practice* of logic and the practice of other sciences (and so questions about the access we have to logical content, and the closeness between logical evidence and methodology and the evidence and methodology of other sciences), and the relation between logic-as-discipline and other sciences in a broader economy of scientific knowledge (and so questions about the structure of logic's relation to other sciences, about the fundamentality of logic to other sciences, its exceptional normativity, and/or exceptional level of inquiry).