

Between Science and Logic: Securing the Legitimacy of Analytic Metaphysics

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Abstract

Analytic metaphysics has been criticized for its dubious epistemological status. Today, anti-metaphysical sentiments often promote naturalized metaphysics as the only viable way to metaphysical theorizing. In this paper, I argue that analytic metaphysics (or at least a significant portion of it) has the same kind of legitimacy that naturalized metaphysics exhibits. I first point out that naturalized metaphysics is secured by the *de facto* legitimacy of natural science and its continuity with it. Then, I argue that analytic metaphysics can pursue a similar strategy by relying on the *de facto* legitimacy of logic. To achieve this result I propose to interpret analytic metaphysics as philosophy of logic.

Keywords: Analytic metaphysics, Naturalized metaphysics, Meta-metaphysics, Philosophy of logic, Epistemology of metaphysics.

1. Anti-Metaphysics

Skepticism and even aversion to metaphysics is a recurrent theme in philosophy.¹ Especially after the rise of modern science, metaphysics has been frequently frowned upon and dismissed as a relic of the past. Today, however, the relation between science and metaphysics is particularly complex. The reason is that metaphysical issues are connected to and often intertwine with foundational and theoretical problems of contemporary science. Of course, the kind of metaphysics involved in those debates is quite peculiar and distinguished from more traditional forms of metaphysical theorizing. It is an investigation deeply informed by science and developed in continuity with it, rather than a form of mostly *a priori* (or at least armchair)² speculation relying on a commonsensical image of reality. As a result, today we have two main strands of metaphysics rivaling

¹ Hume and logical positivism for example.

² See Nolan 2015.

each other: a *naturalized* or *scientific metaphysics* on the one hand,³ and a more traditional form of *speculative* metaphysics, often called *analytic metaphysics*, on the other hand.⁴ Crucially, although analytic metaphysics usually pays lip service to naturalism and claims respect for science, it largely proceeds independently from it (see, for example, Soames 2015). Given such a different engagement with science, it comes as no surprise that, while a tolerant attitude toward naturalized metaphysics is widespread, the analytic approach is undergoing a renewed fire. Accordingly, opponents of metaphysics nowadays mostly target its speculative version, holding that if a metaphysical inquiry can be pursued, it can only be pursued in a naturalized form (Ladyman and Ross 2009). Indeed, also those sympathetic to analytic metaphysics often admit that the discipline looks epistemologically puzzling, as the wide and variegated debates in meta-metaphysics confirm (Wasserman, Manley and Chalmers 2009, Tahko 2015). While it is difficult to precisely define these two kinds of metaphysics, and classification of specific authors can be debatable,⁵ the distinction is now customary, especially after the publication of Ladyman and Ross's *Every Thing Must Go*, in which an enthusiastic manifesto of naturalized metaphysics against analytic metaphysics is provided (See Stollo 2017 for systematic criticisms).

In this paper I claim that a skeptical attitude toward analytic metaphysics is misplaced. I argue that at least a significant portion of analytic metaphysics is as unproblematic as naturalized metaphysics and, in some measure, as science itself. In other words, I elaborate a conception of analytic metaphysics that does justice to a significant portion of it as actually practiced and is resistant to skeptical scruples at the same time. The plan of the paper is as follows. In the next section, I show why science is usually taken to have a more solid status and stress the discrepancy with respect to metaphysics. I claim that metaphysics, but not science, faces an apologetic challenge to secure its epistemic legitimacy. In section three, I argue that naturalized metaphysics can actually be justified by its reliance on science, from which it inherits a *de facto* legitimacy. Then, in section four, I consider analytic metaphysics. I propose a strategy to legitimize analytic metaphysics (or at least a significant portion of it) that replicates the relation between naturalized metaphysics and science pointing to the relation between analytic metaphysics and logic. I show that such an idea is naturally suggested by

³ Represented typically by Ladyman and Ross (2009) and the works in Kincaid, Ladyman, Ross 2013.

⁴ I use the label “analytic” metaphysics opposed to “naturalized” metaphysics to adhere to the common practice. However, I should note that naturalized metaphysics derives from the evolution of logical positivism and is characterized by most of the typical features of analytic philosophy, such as its argumentative nature, stress on clarity, reliance on formal tools, naturalism and respect for science, among others. Speaking as there was an opposition with the analytic tradition in philosophy is thus misleading. The expression “neo-scholastic metaphysics” might be a viable option, but, while I do not consider it derogatory (against the apparent intention of the proponents), it would still be quite inappropriate. Scholastic philosophy is primarily characterized by attempts at reconciling Christian faith and reason, a goal that is extraneous to contemporary analytic metaphysics as such. “*A priori*” metaphysics vs naturalized (or scientific) might also be problematic, since analytic metaphysics is not completely *a priori* (see Nolan 2015), and “naturalized” is not necessarily opposed to *a priori*.

⁵ For example, Quine advocates a strong naturalization of philosophy and ontology, but his work hardly engages with detailed scientific results.

the history of the return of metaphysics in analytic philosophy and its recent evolution. In section five, I explain how this strategy does safeguard analytic metaphysics meeting the apologetic challenge. In the next section, six, I show that this approach is not revisionary, but it does justice to an actual trend. In section seven, I consider some specifications before concluding the paper.

2. The Descriptive and the Apologetic Challenges

The peculiarity of metaphysics with respect to science becomes fully apparent when the goals of their epistemologies are compared. In the case of science, the main goal of epistemology is explaining what knowledge in a certain scientific field consists of and how it is acquired. Epistemology takes the form of an investigation on a phenomenon that is not in question, namely scientific knowledge. Since scientific knowledge is actual, it is possible. The only question is how. What happens, then, if epistemologists are not able to provide such an account? From the point of view of the specific sciences, not much. Take mathematics. Given that mathematical knowledge is routinely achieved, mathematicians do not need to wait for permissions or indications from their fellow epistemologists. Lack of a suitable epistemology of mathematics may be unpleasant, but the consequences for the working mathematicians are not very serious. Of course, this does not exclude that epistemology might have deep implications, or that certain parts of science could even be criticized with philosophical arguments. The point is rather that such implications can hardly arrive to the point of discrediting the whole or even the majority of a well-established scientific discipline.

For metaphysics the situation is different. While mathematicians and scientists do not need to wait for epistemologists' permission to proceed, metaphysicians would highly benefit from a preemptive reassurance that they can achieve their theoretical goals. In other words, if the existence of scientific knowledge is just a matter of fact demonstrated by the success of science, and witnessed by factors such as the progress of the discipline, the consensus of their practitioners, its predictive power, shared standards, and so on, the possibility of knowledge in metaphysics should be secured by an epistemological defense.⁶ Epistemology must show not only *how*, but also, and most importantly, *that* metaphysical knowledge is possible. Let us call the former the *descriptive challenge* ("show how knowledge in metaphysics is acquired"), and the latter the *apologetic challenge* ("show that knowledge in metaphysics can be acquired"). The threat of an apologetic challenge for metaphysics is what marks the epistemological difference with scientific fields of inquiry, and it is what puts metaphysics under fire. If the apologetic challenge was met, the situation would be similar to those of other fields. Providing an epistemology of metaphysics would be a task left to epistemologists, and not being a duty metaphysicians should be particularly worried about.

While the two tasks (accounting for *how* and showing *that* metaphysical knowledge is possible) can be distinguished, it might be thought that only the for-

⁶ The same problem may also affect other fields of philosophy to different degrees. For some areas such as philosophy of language or philosophy of mind, however, the apologetic challenge could also be tamed in a way similar to that of naturalized metaphysics, by stressing the relation with contiguous sciences (like linguistics and cognitive neuroscience).

mer is relevant. Showing *how* metaphysical knowledge can be acquired would automatically solve the apologetic problem by showing *that* it can be acquired. This is why many supporters of analytic metaphysics have followed this route. Several strategies have been proposed so far, often pointing in opposite directions such as emphasizing the special role of intuitions or defending an anti-exceptionalist view according to which metaphysics is not a special form of inquiry. Another, tempting and often attempted move is that of stressing some methodological analogies with mathematics, like the reliance on *a priori* arguments.⁷ I admit that similar ways of answering the apologetic challenge, if successful, would be effective and convenient. At the same time, however, I should stress that there is another way. As in the case of science, the two challenges can be met separately. For science, the apologetic challenge is neutralized from the beginning with *de facto* considerations, and the descriptive side about the *how* is just left to epistemologists. The case of mathematics is striking, since the absence of a satisfactory descriptive epistemology does not endanger the legitimacy of mathematical knowledge, even though the very existence of mathematical knowledge is deeply perplexing. In the next section, I argue that, similarly to science, the apologetic challenge has hardly any grip on naturalized metaphysics too.

3. The Legitimacy of Naturalized Metaphysics

Unlike analytic metaphysics, naturalized metaphysics is usually considered safe from epistemological and scientifically motivated worries. Although also naturalized metaphysics is sometimes criticised by hardcore empiricists like van Fraassen, its pedigree is not frequently questioned. The main reason, I think, is simple and can be put as follows. As noted in the previous section, whatever the right epistemology of natural science might be, the legitimacy of scientific knowledge is hardly questionable. Thinking otherwise would lead to a radical anti-intellectual stance, which seems at odds not just with metaphysics but with any theoretical enterprise, science included.⁸ Given such a privileged status of science, naturalized metaphysics, which itself relies on science, can be easily secured. If science is, *de facto*, epistemologically safe, insofar as naturalized metaphysics is continuous with and possibly relevant to science, then also naturalized metaphysics must be *de facto* possible and legitimate.⁹ Naturalized meta-

⁷ See Williamson 2007, Baron 2018. Since I also appeal to a seeming mathematical discipline, it is perhaps worth noting that my strategy is different. I should also note that such a strategy is problematic. The legitimacy of mathematics stems from its undeniable success, not from its *a priori* methodology. Mathematics proves to be successful, regardless of, and perhaps even in spite of the methodology it employs. The success of metaphysics, by contrast, is what is precisely in question. Thus, if the example of mathematics might weaken a general methodological objection, it is not enough to secure the legitimacy of every *a priori* approach. Indeed, an armchair methodology might still be blamed as the main culprit of the epistemological bankruptcy of analytic metaphysics. After all, metaphysics does not only deal with merely abstract objects, but also with an external reality seemingly made of concrete entities and perceivable properties out of the range of a purely *a priori* study. Similar considerations also hold if applied mathematics, rather than pure mathematics is considered.

⁸ Apart from radical skepticism.

⁹ The status of philosophy of science is actually not uncontroversial, as shown by critical remarks of some prominent scientists (including Richard Feynman, Lawrence M.

physics can then obtain an indirect legitimization from its continuity with science. After all, a rough, but not unreasonable, way to view naturalized metaphysics is as an inquiry about what the world must be like if our best scientific theories are true,¹⁰ so that the boundary between naturalized metaphysics and science is hard to trace, if traceable at all. Consequently, the legitimacy of scientific metaphysics stems from science itself.

The thesis of an indirect legitimacy of naturalized metaphysics can be reinforced by considering its history and evolution in the last century. The anti-metaphysical stance strongly supported by logical positivists proved to be hardly sustainable when the project revealed all its weaknesses. As a result, a resurgence of metaphysics slowly took its way in scientific circles themselves, as reported, for example, by James Ladyman (Ladyman 2012). The final outcome of this post-positivist evolution was complete and manifest by 1974, when John Watkins in the speech titled ‘Metaphysics and the Advancement of Science’, given at The British Society for the Philosophy of Science, claimed that: “I have the impression that it is now almost universally agreed that metaphysical ideas are important in science as it is that mathematics is” (Ladyman 2012). Notably, such a progressive rehabilitation of metaphysics in science has little to do with the parallel resurgence that occurred in analytic philosophy in the last decades. While stemming from a common source (namely the demise of logical empiricism) the different historical paths followed by the two kinds of metaphysics help explain the contemporary divide and rivalry between analytic and scientific metaphysicians. Those working in naturalized metaphysics mostly think of themselves as philosophers of science who contribute, more or less directly, to science itself. Naturalized metaphysics is an integral part of (philosophy of) science, confronting problems that are posed by particular scientific theories. To such scholars, analytic metaphysics is a different and alien discipline, originated in another environment with a different purpose and status.¹¹

Krauss, Steven Weinberg). Some cautionary remarks on such criticisms, however, are in order. To be worrisome in this context, the attacks should be about the theoretical legitimacy of philosophy of science in its relevant forms, typically exemplified by recent philosophies of particular sciences. These, however, are rarely the target of those remarks (for example, Feynman’s alleged claims were probably influenced by historicism and post-positivism, which was on the rise at that time). Moreover, what is often in question is not the theoretical legitimacy of philosophy of science, but its usefulness. Finally, the same authors sometimes venture into philosophy of science themselves, taking explicit positions on philosophical topics, as in Krauss 2013. This makes their voiced rejection of philosophy of science look more verbal than substantial. For a quantitative analysis of the impact of philosophy of science on science (confirming continuity and increasing relevance) see, for instance, Khelifaoui et al. 2021.

¹⁰ The formulation, echoing Quine’s view on ontology, is used (in Italian) by Corti & Fano (2020).

¹¹ When illustrating the story of the resurgence of metaphysics in the context of science, Ladyman presents, among others, the following crucial factors: the continuum between high theory and metaphysics (having to do with the impossibility of adequately specifying a pure observational basis for highly theoretical claims), the explicit engagement with metaphysical issues in science (for example Einstein defending scientific realism with reference to specific metaphysical views), the recognized surplus content of theoretical terms (according to which to explicate the meaning of theoretical terms more than relat-

This story is important for two reasons. First, it shows that it would be hard to delegitimize naturalized metaphysics without putting pressure also on natural science. The idea that naturalized metaphysics inherits a *de facto* legitimization from natural science is thus corroborated. Second, since analytic metaphysics does not directly engage with science and it is extraneous to such a story of reintegration into science, it cannot appeal to the same considerations to secure its epistemological status. Indeed, given its distance from science, analytic metaphysics looks theoretically suspect. Surprisingly as it may sound, however, I intend to secure also the legitimacy of analytic metaphysics and dissolve its apologetic challenge with a *de facto* argument, thereby laying aside the difficult task of providing a descriptively adequate epistemology.¹²

4. The Logic Door to the Resurgence of Analytic Metaphysics

A natural option to obtain a *de facto* justification of analytic metaphysics, different from the one I defend here, might be that of relying on an alleged continuity of analytic metaphysics with naturalized metaphysics. As long as analytic metaphysics is a continuation, at a more abstract level, of naturalized metaphysics, one could suggest that it also inherits the *de facto* legitimacy initially borrowed from science. Naturalized metaphysics would receive its legitimation from science, and then it would pass such a justification on to analytic metaphysics (for example, French and McKenzie 2012, French 2018, Vetter 2018). Although my current proposal does not need to rival this option, I suspect that such a strategy would not be enough. First, since the distance from science would be bigger for analytic metaphysics, the justification would lose strength. Naturalized metaphysics would still appear to be on a firmer foot. Second, analytic metaphysics does not engage with naturalized metaphysics like naturalized metaphysics does with scientific theories. Indeed, while occasional overlapping occurs, explicit engagement seems quite exceptional given the current division between the two communities of metaphysicians.¹³ Third, the attitude toward science, from which the original *de facto* justification comes, is crucially different. Naturalized metaphysics is integrated into scientifically well-informed debates, according to the idea that since metaphysics complements science, it can be pursued in a scientific context. Analytic metaphysics, instead, hinges on the possibility of doing metaphysics even independently of science. The idea is that if science does not rule out metaphysics, it can be pursued even outside of a scientific context. Thus, even if analytic metaphysics were strictly continuous with naturalized metaphysics, the link of justification flowing from science seems cut. Given such difficulties, I turn to another strategy, for which analytic metaphysics and naturalized metaphysics are different, independently justified disciplines.

Since it engages with different projects, analytic metaphysics can hardly rely on natural science like naturalized metaphysics does. Nonetheless, a similar

ing observables is required), and holism about confirmation (for which metaphysics is part of the hard core of a research programme).

¹² I should specify that my goal is to secure at least a significant part of analytic metaphysics, not all analytic metaphysics. For ease of exposition, however, I mostly speak of analytic metaphysics in general.

¹³ Exceptions are notable (for example, the work of authors like Claudio Calosi and Matteo Morganti, e.g. Calosi and Morganti 2016), but apparently not very widespread.

apologetic strategy can be adopted by replacing natural science with logic, and philosophical logic in particular. Since looking at the historical path is again helpful, I briefly rehearse such a history. I should stress, however, that my interest is not historical. I just want to find inspiration for a theoretical solution to the apologetic challenge by focusing on a particular trajectory of the resurgence of analytic metaphysics. Such a trajectory is a prominent one, but it certainly does not exhaust the complexity of the process.

The main steps of this process can be quickly summarized as follows (For example, Simons 2013). Firstly, it should be noted that while analytic philosophy typically opposed metaphysics in its early stages, the anti-metaphysical attitude was not dominant or universal. The founding fathers of analytic philosophy (Frege, Russell, Moore) all engaged with metaphysical problems and proposed metaphysical solutions, not just linguistic dissolutions, to them. The attitude changed with Wittgenstein, logical positivism and the philosophy of ordinary language. In these strands metaphysical problems were considered pseudo-problems arising from the violation of linguistic constraints. A careful linguistic analysis would have led either to genuine issues treatable by science or to their disappearance. It is from this phase that metaphysics later resurged. However, even during the rise and dominance of the linguistic turn not all analytic philosophers equally opposed metaphysical investigations. Two notable exceptions are found in Poland, with the logic school of Leśniewski and others, and, in the U.S.A. with the work of Gustav Bergmann and Donald Cary Williams. Later, in the '50, the metaphysical turmoil increased. On the one hand, metaphysical investigations became prominent in countries such as Australia, where a number of scholars, most notably David Armstrong, just embraced metaphysics. On the other hand, the work of important philosophers such as Strawson and Quine put an end to the general attitude of opposition to metaphysics. Quine's criticisms of the analytic/synthetic distinction in particular is usually considered as the turning point at which the dogmas of logical positivism became fully obsolete. From this point on, the door was open and analytic metaphysics could thrive again. Its resurgence was finally accelerated by the modal turn derived from development in modal logic, which is the crucial factor I want to focus on.

Although both naturalized and analytic metaphysics sprang from the same source (namely the demise of logical positivism) they soon took diverging paths. Once the tide of the so-called linguistic turn had passed,¹⁴ naturalized metaphysics began its process of reintegration into scientific debates, as already hinted above. By contrast, a crucial factor in the analytic tradition, marking the full return of traditional speculative metaphysics as a central area of philosophical investigation, is notoriously connected with the works that fully established modal logic as a legitimate field of study. Kripke's semantics, together with the pioneering work of several other logicians such as Barcan Marcus and Hintikka, demonstrated that modal reasoning could have been regimented and precisely studied by formal means in a similar way to what classical logic did with respect to mathematical reasoning. The formally rigorous treatment vindicated the intelligibility of several traditional metaphysical notions (such as *de re* modality or even essentialism), on

¹⁴ Note that naturalized metaphysics has been less affected by the influence of the linguistic turn, and, contrary to analytic metaphysics, linguistic analysis and considerations about natural language play no particular role in it.

the face of logical positivism and the last resistance of Quine. The ensuing reflection on modal logic gave rise to works where logic is deeply intertwined with metaphysical issues (consider, for instance, Quine 1953 and the papers in Linsky 1971). Indeed, the metaphysical significance of several questions raised in modal logic became clear and is nowadays standard. Textbook examples include the potential variance of domains in different possible worlds, the related validity of Barcan formulas, the problem of cross-world identity, the status of essentialism, and so on (See textbooks such as Fitting and Mendelsohn 1998 or Girle 2000). On the purely philosophical side, the approach proved extremely fertile, with modal and intensional analysis being applied to many philosophical problems. Such a modal turn had its notorious peak with David Lewis, who eventually put analytic metaphysics back at the center of the philosophical arena. Through the door of modal logic, traditional metaphysics came back.

While modal logic is the most notable and evident case, it is not the only formal study that entered the philosophical scene in the last decades. Another prominent example is formal mereology. Although the study of mereology and its formal versions dates way before the return of analytic metaphysics championed by Lewis, his modern study intensified in more recent times mostly because of his work.¹⁵ Moreover, beside modal logic and mereology, the term 'philosophical logic' today indicates a host of different logics modeling philosophically relevant notions whose study is constantly growing. Easy examples are provided by logics that are syntactically and semantically similar to the systems for alethic modality (and sometimes covered under the term 'modal logic' in a broad sense), such as temporal logic, conditional logic, dynamic logic, deontic logic, and so on. From a historical perspective, the recent return of analytic metaphysics parallels and often interacts with such a development in philosophical logic. Works in the logic field fueled and promoted activity in the metaphysical camp, and formal work itself has often been driven by metaphysical urgencies.

To be historically accurate such a reconstruction should clearly include several details, however, the purpose of this quick historical sketch is just to remind a very familiar story about the correlation between the return of analytic metaphysics and the rise of modal and philosophical logic. Under the light of these historical impressions, a partnership between analytic metaphysics and logic suggests itself. It is to deepen this idea that I now turn.

5. Analytic Metaphysics as Philosophy of Logic

Following the historical suggestion, I claim that analytic metaphysics can obtain its legitimacy by leveraging on a discipline which is arguably as legitimate as natural science: logic. While, *prima facie*, logic can be roughly understood as the

¹⁵ For example, and limiting attention to the last century, Leśniewski 1916, 1927-1931, Goodman and Leonard 1940. For a critical overview of contemporary mereology see Lando 2017. Lando actually argues that mereology is not logic since, for instance, formal principles are not enough to isolate its subject matter and intuitive constraints must be added. Lando nonetheless concedes that mereology exhibits, to some degree, generality and topic-neutrality, which also inspired traditional attempts to demarcate logic. He also concludes that "The formal features of parthood and of other cognate relations and operations are what philosophical mereology is about" (Lando 2017: 29). Overall, this seems to leave at least some room to implement the present strategy.

study of correct (deductive) reasoning,¹⁶ to pursue the present strategy a more precise account is needed. In particular, what is needed is a view of logic meeting at least three constraints. First, it should classify as logic most, and possibly all, of the theories relevant for the project. Second, the account should vindicate the expected epistemological legitimacy of logic, on which analytic metaphysics is to be grounded. Third, to be general enough, it should avoid taking a precise stance on substantial issues in philosophy of logic. Note that the second and third constraints are not in tension as they might appear. The paper moves exactly from the idea of distinguishing descriptive and apologetic challenges, by stressing the *de facto* legitimacy exhibited by extrinsic and social factors, such as the progress of a discipline, the relative consensus among its practitioners, shared standards, and so on. Hence, to meet the last two constraints, it is enough to adopt an account of logic that captures a suitable collection of theories exhibiting a *de facto* legitimacy, revealed by similar factors, regardless of more substantial characterizations. To do that, what counts as logic can be determined by simply deferring to the relevant community of experts, namely logicians. In this sense, ‘logic’ is what a specific community of scholars recognizes as such by means of certain institutionalized practices.¹⁷ In particular, since their judgment takes a prominent institutionalized form in the publication of specialized journals,¹⁸ we can adopt a practice-based account according to which something counts as logic if it is in the range of such specialized journals, as witnessed by the record of their published papers.¹⁹ It is easy to see that such an approach meets all three constraints above.²⁰ Indeed, since papers on modal logic, higher order logics, plural logic, and so on have been all routinely published in specialized logic journals, such theories count as logical theories whose epistemic legitimacy is sanctioned by the reliability of the community of its experts.^{21, 22}

¹⁶ This rough view of logic is not unproblematic, since, for example, both the normative aspect and the relation with reasoning could be challenged.

¹⁷ Linnebo and Pettigrew, articulating a moderate form of naturalism, hold that “the opinions of scientists working in that discipline can suffice to establish that there exists a justification for some philosophically significant claim...” (Linnebo and Pettigrew 2011). Here the philosophically significant claim is whether a certain theory counts as logic.

¹⁸ Including journals such as the *Journal of Symbolic Logic*, the *Review of Symbolic Logic*, *Annals of Pure and Applied Logic*, the *Journal of Philosophical Logic*, and so on.

¹⁹ Alternatively, a theory might be considered a logic if it concerns the inferential principles governing some arbitrary notion, typically characterized by means of pervasive formalization. This view stems from the idea (Tarski 1983, Varzi 2002) that there is no real demarcation separating logical and non-logical expressions. Although this move would lead to a possibly worrying proliferation of logics (opening the door to disparate systems such as the logic of marriage or hope, as in Pan 2013), their epistemic legitimacy might still be defended in terms of the epistemology of inferential knowledge. This strategy, however, would force precise positions on substantial issues.

²⁰ The approach can also be intended as a *prima facie*, fallible, strategy that might be eventually replaced by a substantial one, when found. Nevertheless, such a putative account should still match the actual practice of logicians to a good extent.

²¹ It could be objected that this account includes too much, since also papers on related topics, such as algebra or category theory, would be dubbed ‘logic’. However, it should be kept in mind that what is needed here is not a demarcation that captures the real nature of logic, but one that corresponds to an epistemologically legitimate discipline while including enough theories that are typically subject to metaphysical speculations.

They are *de facto* legitimate, regardless of what the deeper nature of logic is and how its epistemology works.²³

Once logic is so identified, we can return to analytic metaphysics. If naturalized metaphysics is interpreted as a proper portion of philosophy of science, investigating foundational and interpretational issues such as *what the world must be like if our scientific theories are true*, analytic metaphysics can be interpreted, and secured, in a similar way. It can obtain an indirect *de facto* justification by being interpreted as a portion of philosophy of logic, arguably continuous with logic, investigating foundational and interpretational issues such as *what the world must be like if our logical theories are true*. Note that the continuity with logic should be taken seriously. We have a continuum of various works with pieces more focused on philosophy at one end of the spectrum and others more focused on pure mathematics at the other. Between these two extremes, we have logic more broadly understood, whose precise boundaries with philosophy of logic and pure mathematics are often hard to trace, if traceable at all. Thus, although we might want to distinguish pure philosophy of logic from pure mathematical logic, it would be pretentious to neatly separate philosophy of logic and logic in general. The continuum is particularly clear if issues concerning truth or correctness are considered. Deciding whether, e.g., a certain axiom is true is a task that in many cases pertains to both logic and its philosophy.²⁴ Distinguishing between the two would be pointless (see also section 7 below on this). In this respect the situation of naturalized metaphysics is different. Although we have a continuum also between naturalized metaphysics and science, experimental testing plays a more significant role in theory choice in science. Hence, philosophy is bound to be more crucial to settle theoretical issues in logic than it is science. These considerations suggest that analytic metaphysics would be better identified with a portion of both philosophy of logic and logic, with only the likely exclusion of purely mathematical logic. It must nonetheless be a portion, because certain topics in philosophy of logic (like epistemological ones) might be outside the scope of metaphysical investigations, and some technical aspects of logic proper may not be of any particular metaphysical relevance. For the sake of simplicity, however, henceforth I speak of ‘philosophy of logic’ or ‘(philosophy) of logic’ to stress that what is at stake is the part of the logic spectrum lying toward and including its philosophical end.

If such a view of analytic metaphysics is eventually adopted, the following reinterpretations suggest themselves: metaphysics of modality is to be reinterpreted as philosophy of modal logic; metaphysics of properties as philosophy of higher

²² The possible objection that, for example, formal mereology is not logic because it concerns a non-logical predicate would beg the question. What is needed is exactly a demarcation principle establishing what expressions are logical.

²³ Of course this is compatible with the idea that different areas of logic may exhibit *de facto* legitimacy in different degrees. For example, mature areas of research, such as modal logic, are more solid than relatively new fields, such as the logic of ground. Since the latter is not yet fully developed, the factors marking its legitimacy (progress, shared standards, relative consensus, and so on) are not fully established yet.

²⁴ The connection and continuity of logic with philosophy of logic can also be reinforced by noting the following traits, paralleling the case of naturalized metaphysics and natural science: The problem of content and demarcation of logical terms; The continuum between foundation of logic and its philosophy; The explicit engagement of logic with philosophical issues, and so on.

order and plural logics; metaphysics of identity as philosophy of the logic of identity; metaphysics of parthood as philosophy of (formal) mereology; metaphysics of grounding as philosophy of the logic of ground; metaphysics of dispositions as philosophy of the logic of powers; and so on and so forth.

While the historical connections already suggest that such reinterpretations are natural for a significant amount of contemporary work in analytic metaphysics, let me emphasize how this move can solve the apologetic challenge, before considering possible objections. Suppose that analytic metaphysics is accounted for in terms of a rational investigation of foundational and interpretational issues such as what reality must be like if our logical theories are true. Accordingly, analytic metaphysics would consist in a chapter of philosophy of logic. The apologetic challenge “Show that knowledge in analytic metaphysics can be acquired” becomes: “Show that knowledge in (philosophy of) logic can be acquired”. Remember that the apologetic challenge is distinguished from the descriptive one of showing how logical knowledge is acquired. The descriptive challenge for logic is certainly non trivial, but one need not embark in that enterprise to show that logic and its philosophy are legitimate fields. A much simpler and more direct option is available. Indeed, while metaphysics has undergone fierce attacks, philosophy of logic and logic did not suffer any comparable, and perhaps any at all, criticism. Logical positivists themselves did not try to undermine the legitimacy of philosophy of logic, as they even contributed to it (for example, Carnap 1937). Why is philosophy of logic not a critical target like metaphysics? The main reason, I think, is that the legitimacy of logic is hardly questioned, and even hardly questionable. Logic exhibits a *de facto* epistemological legitimacy which is, analogously to natural sciences, revealed by features such as progress, relative consensus, shared standards, and so on.²⁵ In other words, the legitimacy of logic can be secured with *de facto* arguments. Since logical knowledge is actual, not much else is needed to secure its possibility, exactly as in the case of mathematics, physics or biology. The status of logic could even be reinforced further by pointing to the peculiarity of its specific subject matter broadly understood as correct deductive reasoning. Since deductive reasoning is a key component of every rational inquiry, a dismissal of logic seems mostly viable to radical skepticism.²⁶

What about philosophy of logic rather than logic, though? The situation here is similar to that of philosophy of science and naturalized metaphysics. Once logical knowledge is secured, also philosophy of logic enjoys an indirect legitimization. As long as logic is legitimate, rational reflection on it must be legitimate too. Questioning the legitimacy of well conducted forms of philosophy of logic would put logic itself at risk. Indeed, several prominent figures in the history of logic have worked at the boundary of logic and philosophy, proving the continuity between the “two” camps. While today the intellectual division of labor between philosophers of logic and purely mathematical logicians may be deeper than in the years of Frege, Russell, or Brouwer, probably also as a result of modern hyper specialization, it would be hard to reject the legitimacy of phi-

²⁵ Even perhaps predictive power, as argued in Hjortland and Martin 2021.

²⁶ For simplicity I put logical nihilism aside, although the general point could be reframed in terms of validity of single inferences, which also the logical nihilist must accept. On logical nihilism see, for instance, Russell 2018, Cotnoir 2019. Dicher 2021 for criticism.

philosophy of logic without also rejecting many logical projects stemming from it (think of intuitionistic logic, relevant logic, the study of paradoxes, or, more recently, the logic of ground).

The nice consequences of this situation for analytic metaphysics are straightforward. If philosophy of logic obtains legitimization from its strict relation and continuity with logic, and analytic metaphysics is interpreted as a portion of philosophy of logic, then it enjoys the same justification. By interpreting analytic metaphysics as (philosophy of) logic, the apologetic challenge is again met with *de facto* considerations. Like any other science, analytic metaphysicians can proceed in their research without waiting for epistemologists permission.

At this point it is worth noting that once analytic metaphysics is reduced to philosophy of logic, also its descriptive epistemology becomes parasitic of that of philosophy of logic. Understanding how metaphysical knowledge is obtained requires understanding how logical knowledge is obtained. The situation is similar for naturalized metaphysics, which, being continuous and subsidiary to natural science, also demands an epistemological account of science itself.²⁷ While the exact nature of such epistemologies is not important here (since the strategy is a *de facto* one), two remarks are worth making. One is that, so reframed, several potential objections to analytic metaphysics fade away. For example, the alleged problematic reliance on intuitions in analytic metaphysics becomes potentially harmless once viewed in terms of the role of intuitions about logic. Indeed, it might also turn out that logic does not require any special resort to *a priori* intuitions at all. According to logical anti-exceptionalism, “logic isn’t special. Its theories are continuous with science; its method continuous with scientific method” (Hjortland 2017). If so, both analytic metaphysics and naturalized metaphysics would deal with sciences, although different ones. The second remark is that, according to the approach advocated in this paper, a host of metaphysical alternative views would present themselves in slightly different clothes. For example, the opposition between metaphysical realism and antirealism would be rephrased as realism or antirealism about logic. Accordingly, metaphysical disputes would not be lost but just reformulated as analogous disputes about logic.²⁸

Before showing that the identification of analytic metaphysics and philosophy of logic is not just convenient but descriptively right, let me dispel some basic objections that could be moved against the viability of the suggested strategy. First of all, it could be objected that characterizing analytic metaphysics as investigating *what the world must be like if our logical theories are true* hardly makes sense, since metaphysics and natural science describes the world, but logic does not. Given such a discrepancy, it is helpless to try to get metaphysics out of logic. This objection, however, is easily neutralized. First, the idea that natural science is about the world is questionable, as shown by antirealist and instrumen-

²⁷ Note that since I am identifying analytic metaphysics with philosophy of logic, not just with logic, there is room for different epistemologies. Similarly, the epistemology of naturalized metaphysics is strictly related, but not necessarily identical to that of natural science. The issue is also complicated by the problem of how philosophy should be distinguished from other disciplines.

²⁸ That many options remain open is also a consequence of the fact that logic has been identified in practice-based terms, rather than by adopting a particular conception of the nature of logic.

talist conceptions. Moreover, scientific theories do not always (and sometimes hardly) wear their interpretations and connection with the manifest world on their sleeves, so that even if a scientific theory is taken to describe the world, the worldly picture emerging from it is often underdetermined (as the case of quantum mechanics demonstrates).²⁹ Second, also the claim that metaphysics is about the world is questionable. Metaphysics may be about our conceptual schemes rather than about an independent reality. Although such a view is probably not dominant nowadays, it is a possible conception nonetheless and it was supported, for example, by the early linguistic meta-philosophical views. Third, the claim that logic is not about the world is equally contentious. Several authors (such as Maddy or Sher)³⁰ explicitly disagree, and various forms of logical realism are frequently discussed (Sider 2011, McSweeney 2019, Tahko 2021). Surely, the metaphysical picture emerging from a logical theory (for example from the modal system S5) is often severely underdetermined (so that, for example, the choice between modal realism or modal fictionalism might not be simply dictated by the formalism). But, as remarked, this may be the case for scientific theories as well.

Another objection might stem from the fact that many different logics are available. For example, one can construct a plural logic and one can construct a second order logic, but how does this tell us what the world is like (at least with respect to properties)? The reply, however, is simple. Provided that the two logics have been saddled with a metaphysical interpretation, to answer the question we must decide what logic, if any, is the correct one. That there are many logical theories available does not immediately imply that all such logics are correct.³¹ To decide whether reality is accounted for by the metaphysical picture delivered by plural logic or by the one delivered by second order logic we must decide which logic is right. Of course, theory choice is not easy, and determining what logic is correct is a complex and difficult task, but the proposal was never intended to make analytic metaphysics easy.³²

6. 'Analytic Metaphysics as Philosophy of Logic' in Action

If analytic metaphysics is interpreted as a form of philosophy of logic, the apologetic challenge is met. This is already a strong reason to promote such an identification. But does the proposed strategy advocate a revisionary conception of metaphysics, or does it do justice to how analytic metaphysics is actually conducted? In this section I give some evidence suggesting that the proposed view is not only convenient but also descriptively adequate to a good extent. In particular, I show

²⁹ One could insist that if metaphysics is about the world and logic is about conceptual schemes, we do have a separation. In this case, however, on the one hand, metaphysics would be under the pressure of competing with naturalized metaphysics. On the other hand, philosophy of logic would still provide an alternative conception of metaphysics as mostly conceptual.

³⁰ Sher 1991, Maddy 2002.

³¹ This is a standard specification, for example, in the debate on logical pluralism.

³² The assessment will probably also involve metaphysical considerations. For example, a nominalist could criticize second order logic because it arguably supports a metaphysics of properties. Note that this interplay is vindicated by the present proposal and it is not problematic. Logic is intended to precede analytic metaphysics only in the epistemic order of justification, not under every respect.

that the account naturally aligns with a current and growing trend in analytic metaphysics, so that the present proposal just takes such a practice seriously.

First of all, I should call attention to a number of general similarities between analytic metaphysics and (philosophy of) logic, pointing toward a natural convergence of the two. However, for reasons of space, and since I already presented them elsewhere, I just quickly mention them to reinforce the overall appeal of such an identification (Stollo 2018). Similarities include the ambition to absolute generality, the apparent recalcitrance to empirical data, the role of linguistic competence and common sense as sources of evidence, the role of paradoxes, the role of language and reasoning, and the mutual correspondence between several meta-theoretical disputes (such as the possibly merely verbal nature of disagreement: see Hirsch 2010). Since such traits are hardly so systematically shared with other fields, logic and analytic metaphysics present themselves like disciplines with a similar and peculiar profile. But there is more.

As already noted, today many metaphysical issues are paired with corresponding philosophical logics. The divide between metaphysics and philosophy of logic, for example, fades away in many works on contemporary mereology. A quick look at the papers collected in Baxter and Cotnoir's *Composition as Identity* provide several instances of this approach (Baxter and Cotnoir 2014). Would it be unreasonable to consider Turner's paper³³ (just to randomly pick one) as a piece of philosophy of logic, and philosophy of formal mereology in particular? Hardly so. Indeed, this seems a natural way of presenting its content. At the bare minimum, metaphysics and philosophy of logic overlap there. Or take the recent interest in fundamentality. Research in the logic of ground directly stems from and intertwines with metaphysical issues. Again, in such cases it would be pointless to tell discussions on the philosophy of the logic of ground apart from discussions on the metaphysics of grounding. Take Fine's "The pure logic of ground", deRosset's "On weak ground" or Poggiolesi's "On defining the notion of complete and immediate formal grounding" (Fine 2012, deRosset 2014, Poggiolesi 2018). Discussing whether they should count as papers in the logical camp rather than the metaphysical field is pointless. Apart from the superficial feature of how many formulas a paper may host,³⁴ they are both logically and metaphysically relevant at the same time. Similar cases could be proposed for many other topics such as the possibility of absolute generality or plural quantification (Torza 2015, Florio and Linnebo 2021). If an objector, complaining about the lack of systematicity of the above examples, raised the concern that they could be the mere result of cherry picking, it should be clear that the high number of pickable cherries supports the present thesis nonetheless.

There is, however, even more than this widespread alignment, frequent overlapping and interaction. The methodology of merging metaphysics and logic together has been explicitly adopted by prominent philosophers. Direct support for the identification of analytic metaphysics with (philosophy of) logic is indeed manifest in some recent works. The clearest and most obvious case is

³³ Turner 2014 discusses a formal regimentation of Baxter's view of identity where Leibniz' law is dropped.

³⁴ Similarly, the philosopher of physics David Albert submits a paper to a physics journal rather than to a philosophy journal if the paper contains more than two equations (https://www.youtube.com/watch?v=UNpLfXOfzZ8&ab_channel=BigThink, min 3.53).

Williamson's *Modal Logic as Metaphysics*, where, already in the title, Williamson is upfront in the kind of project he engages in (see Williamson 2013 already in the preface). But the same methodology is also adopted in other works, for example those about higher order logic and the metaphysics of properties, like: Bacon, Hawthorne and Uzquiano, "Higher-order free logic and the Prior-Kaplan paradox"; Fritz and Goodman "Higher order Contingentism Part 1"; or Trueman, *Properties and Propositions, the metaphysics of Higher order logic*.³⁵

Given such a scenario, I suggest that the development of philosophical logic, paralleling and often intertwining with metaphysical debates, is now crystallizing in a specific methodology which relies more and more on logical methods. The idea that analytic metaphysics is a form of philosophy of logic naturally emerges from this growing trend. Hence, even independently from the epistemological merits I already emphasized, the proposal presents itself as descriptively correct to some extent, fitting a widespread contemporary practice. That a significant portion of analytic metaphysics is conducted as a form of philosophy of logic is, first of all, a fact that should be registered. The proposed interpretation is thus not intended to be revisionary, but to take on board a trend that already exists and independently grows in contemporary analytic metaphysics. Therefore, in some of its prominent contemporary forms, analytic metaphysics is already epistemically unproblematic.

7. Limits and Specifications of the Proposal

Assume that my proposal works and analytic metaphysics is reinterpreted as (philosophy of) logic. Is such a view able to vindicate *all* analytic metaphysics? I have no ambition to answer 'yes' to this question. Before discussing potentially recalcitrant cases, however, it is important to say something about the role of formalization and mathematical systems in the present view. Although philosophy of logic can be, and typically is conducted after a formal system is fully developed, philosophical considerations are often crucial both to prepare the ground for and while a formal theory is being elaborated.³⁶ At the same time, although formalization is important and valuable, informal philosophy concerning notions displayed in informal reasoning is philosophy of logic enough. It thus follows that one should not object to my proposal by pointing to pieces of metaphysical speculation that do not explicitly rely or engage with formal systems.

Even with such specifications in force, the view of metaphysics as philosophy of logic seems unable to do justice to all analytic metaphysics. Take, for example, the debate on the nature of time or the one on the metaphysics of artifacts (see Carrara and Olivero 2021 for a critical overview). In what sense are such debates disputes in philosophy of logic? Hence, one could object that there are important parts of contemporary analytic metaphysics that are neglected by the present proposal. My basic reply to that is: "yes, but...". *Yes*, I admit that the proposal might have a limited range and be unable to do justice to all metaphysics. *But*, at the same time, the portion it vindicates is significant nonetheless. Indeed, since the ambition to vindicate all metaphysics in one move would be too high a task, if the proposal fits at least a significant part, it retains much of its

³⁵ Fritz and Goodman 2016; Bacon, Hawthorne, Uzquiano 2016; Trueman 2020.

³⁶ Of course a merely mathematical study might be motivated independently of consideration about truth.

value. Moreover, two additional remarks are relevant. First, also in recalcitrant cases some space for logical considerations is available. For example, some issues about time can be recast in logical terms by means of temporal logic, and some problems about artifacts can be connected to the logic of identity.³⁷ Second, the interpretation of metaphysics as philosophy of logic is not the only strategy able to tame epistemological worries. Naturalized metaphysics is another option. The logical proposal put forward here is not intended to replace naturalized metaphysics but to team it. Accordingly, the overall metaphysics of time could be considered as the result of integrating the naturalized metaphysics of time with reflections on the philosophy of temporal logics. A similar labor division in metaphysics between notions more or less apt to a logical treatment is again mirrored in actual practice. Discussions on time, causation, and natural laws, invite, if not require serious engagement with natural science and lead the metaphysician under the realm of naturalized metaphysics. By contrast, traditional discussions on notions such as identity, grounding, parthood, properties, modality, seem in principle immune to empirical results and lead the metaphysician to logical regimentations (see Bryant 2020).

Possibly, even once combined with naturalized metaphysics, not all analytic metaphysical inquiries would be covered, so that other approaches might be needed. However, even in this case, a large amount of metaphysical work would have been already secured. Indeed, it might also be suggested that metaphysical reflections escaping logical and scientific treatments are just the kind of general and philosophical reflections that must struggle in unexplored territories, where epistemological safety could never be forthcoming. That is where metaphysics fades into general philosophical speculation. The fertility of such epistemically risky philosophical inquiries is a topic for another discussion, but such theorizing is often a necessary prerequisite to develop firmer studies. Such debates are the preliminary steps to eventually develop specific sciences or logics with their associated, and epistemologically safe, metaphysical sides.

8. Conclusion

In this paper I argued that the epistemological legitimacy of a significant portion of analytic metaphysics can be provided by interpreting it as (philosophy of) logic. Such an identification allows an indirect *de facto* justification, similar to that of other well established fields of inquiry. In particular, the status of analytic metaphysics becomes similar to that of its rival: naturalized metaphysics. Notably, such a conception vindicates a recent growing trend in analytic metaphysics, where metaphysics is actually conducted as (philosophy of) logic. As currently practiced, analytic metaphysics is in large part already safe. Analytic metaphysicians should then continue their work without worrying about defending the intellectual legitimacy of their study.

A particular side benefit of this proposal is that it tames the rivalry between analytic and naturalized metaphysics. The two metaphysical approaches can be taken to compete in addressing the same questions only in a very general and vague sense, since they actually focus on different notions calling for different

³⁷ For example, the question of whether the future is determined, could be reformulated as the issue of whether excluded middle holds for future events. For artifacts and identity see, for example, Carrara 2009.

methodologies.³⁸ That no opposition is really there could even be made explicit by speaking directly of philosophy of science and philosophy of logic, instead of using the vexed term 'metaphysics'. Probably, even the fiercest opponent of analytic metaphysics does not raise an eyebrow if a metaphysical paper is presented as a work in philosophy of logic. Once analytic metaphysics is labeled as 'philosophy of logic' scruples against it seem to vanish. While I do not suggest dropping the term, current aversion to 'metaphysics' might be more the result of old and outdated biases triggered by a word, rather than an authentic opposition to the actual contemporary practice.

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³⁸ See Paul 2012 for a defense of the idea that the methods are basically the same.

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