

From Analytic to Scientific Philosophy:
History, Tendencies and Method

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Resumen

Las diferentes áreas de investigación derivadas de la filosofía analítica fueron adquiriendo cada vez más autonomía, por lo que un núcleo común de principios parece indeterminable en la actualidad. No obstante, la adopción de métodos e instrumentos científicos está aumentando en todo el ámbito. Esta tendencia puede justificar una débil visión holística del conocimiento filosófico como parte del conocimiento global. En esta situación, las reconstrucciones histórico-filosóficas críticas de los temas relacionados con la mente y los programas de investigación sobre la cognición pueden converger, redefiniendo algunos conceptos centrales y conduciendo posiblemente a nuevos principios epistemológicos y metodológicos comunes.

Palabras clave

epistemología, metaepistemología, filosofía científica, metafilosofía, metodología

Abstract

Different research areas deriving from analytic philosophy increasingly gained autonomy, so a common core of principles appears indeterminable nowadays. Nevertheless, the adoption of scientific methods and tools is increasing in the whole domain. This tendency can justify a *weak holistic* view of philosophical knowledge as a part of global knowledge. In this situation, critical historic-philosophical reconstructions of mind-related topics and research programs in cognition can converge, redefining some central concepts and possibly leading to new epistemological and methodological common principles.

Keyword

epistemology, metaepistemology, scientific philosophy, metaphilosophy, methodology

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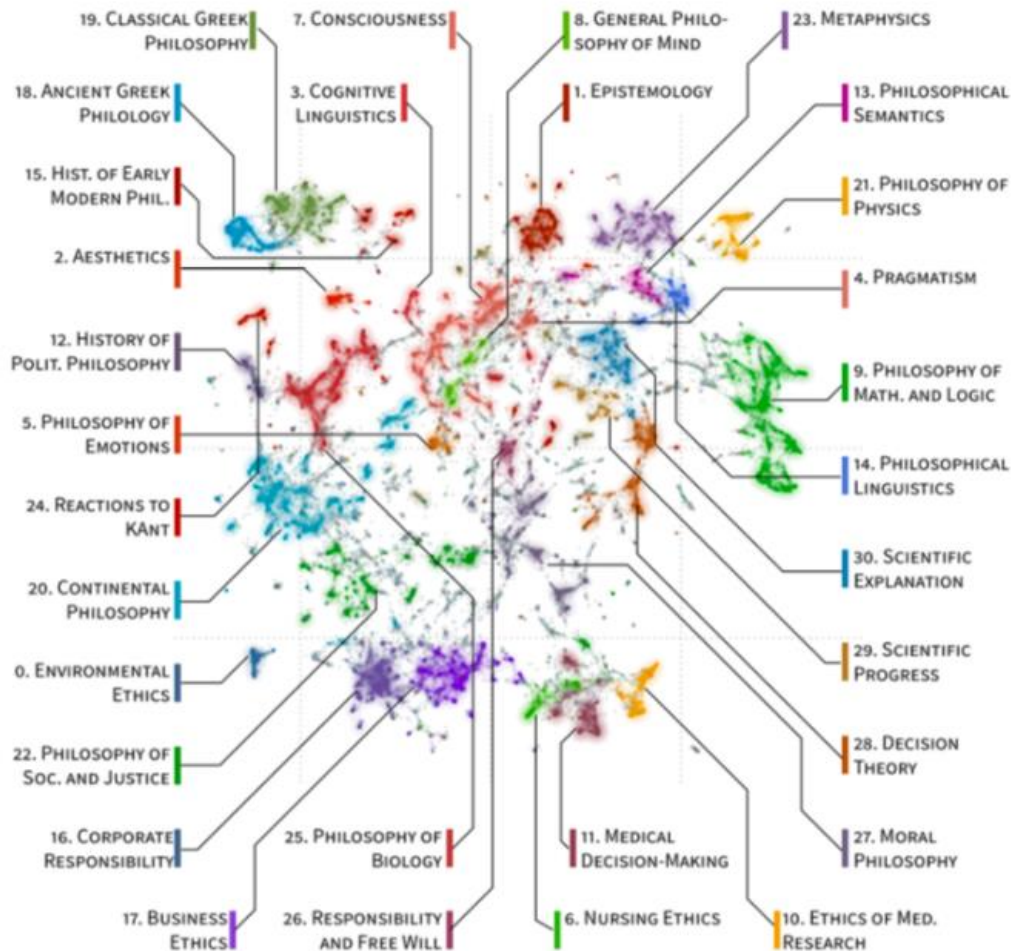
In *Modeling the structure of recent philosophy* (Synthese, 2021), M. Noichl presented a survey, obtained through unsupervised machine-learning, of a large portion of the contemporary academic production. The classification of the materials was achieved through cocitation patterns; these were used to determine similarity-matrixes, so attaining dimensionality reduction and clustering.

The articles can be considered “representative” insofar as the sampling of the publishing journals was derived on a statistical basis from *PhilPapers*; after that, the single articles were tracked in the *Web-of-Science* through their bibliographical Infos, undergoing a selection on the ground of their quantifiable academic impact. The resulting distributional graphics revealed, among other things, that while the so-called *continental philosophy* preserves a quasi-exclusive inner core of texts of reference, it is not definable what we should understand today under the label *analytic philosophy*¹: in particular if we include all the newborn fields which are supposed to derive from this tradition, no common pattern of bibliographical references can be identified - and without it, no standard set of explicit principles (nor in a weakened version, as a miscellaneous group with blurred-boundaries defined by “family resemblances”).

Maybe we should simply talk of *philosophy of language, of mind, of ethics, of philosophy*, etc., without including in the adjectival specifications of the subareas the term *analytic*, as quite many scholars already do; on the contrary, continental philosophers would be allowed and maybe encouraged, to use the corresponding label for their statistically better defined and more restricted area of expertise².

¹ See Bourget & Chalmers, 2014, 489: “philosophers have substantially inaccurate sociological beliefs about the views of their peers.”

² Noichl underscores the recurrence of some names such as Merleau-Ponty, Heidegger, Garfinkel, Bourdieu, Arendt, Butler, Husserl, Anderson, Hardt, Derrida and Foucault.



Anyway, tackling the problem of self-identification of analytic philosophy, Noichl states that his result “does not mean that there never was such a cohesive field, only that it doesn’t form a cohesive structure in a sample centered around the early two 2000s”³. Independently from the appropriateness of the actual labels, we can propose some historical reasons for this “dispersion” of the tradition, hopefully providing at the same time a more refined understanding of the present situation.

Adopting a more specific historical interpretative frame, the absence of *evident* common methodological and epistemological principles for the supposed general discipline ceases, in fact, to appear particularly problematic. Suppose we conceive the supposed

³ Noichl, 2021, 5097.

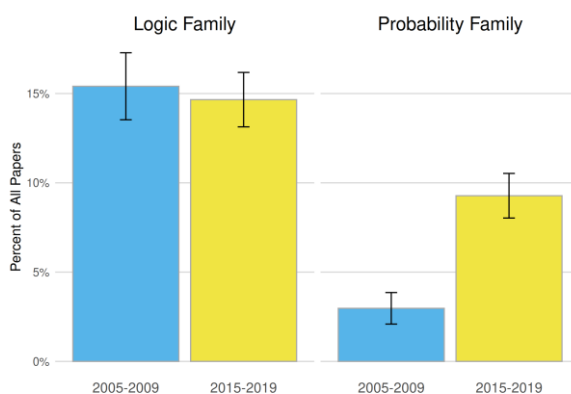
common tenets in a traditional philosophical way, i.e., the determined *Weltanschauung* conveyed by a specific philosophical movement. In that case, we will indeed not find a maximal set of them⁴ suitable to encapsulate something like the “heredity of analytic philosophy” in the actual panorama. And this is already the *reason* for the absence of what we can call a bibliographical core. But if we conceive, based on some preliminary reflections, the actual results of the historical transformation of the analytic tradition in terms of science-oriented, although not programmatically unified, philosophical fields (including first of all the use of formal methods, but also the ideal of objectivity, the conception of progress and specialization of philosophical knowledge, and the continuity of philosophical and scientific research in general), then we would gain a pretty different impression.

Obviously, we can register deep contrasts among different philosophical currents focusing on the same areas, and the presence of conflicting perspectives remains a central characteristic of philosophy itself⁵, not reducible to the immaturity often supposed to affect new-born sciences insofar they tend to lack a common core of principles and fall short of the historical dialectics leading to intersubjectively accepted methods. But convergence is nonetheless emerging in terms of commonsensical rationality of background assumptions, general logical argumentative validity, and consequently basic coarse definitions of the areas (the different sub-disciplines appear indeed much more well defined than some decades ago, and the journals’ relative biases in terms of titles and

⁴ The nonexistence of a unique maximally consistent set of principles suggests an interesting analogy with the history of the foundation of mathematics, where the coexistence of several *irreducible* basic axiomatic frames was already observed and understood by MacLane (one of the fathers of Category Theory) in the 30s, against Carnap’s hope in a univocal foundation based on *analytic a priori* truths. MacLane’s intuition probably influenced *ante literam* Quine’s later famous critique. (V. Awodey, 2014)

⁵ See, for example, *The Epistemology of disagreement*, by Christensen and Lackey, 2013.

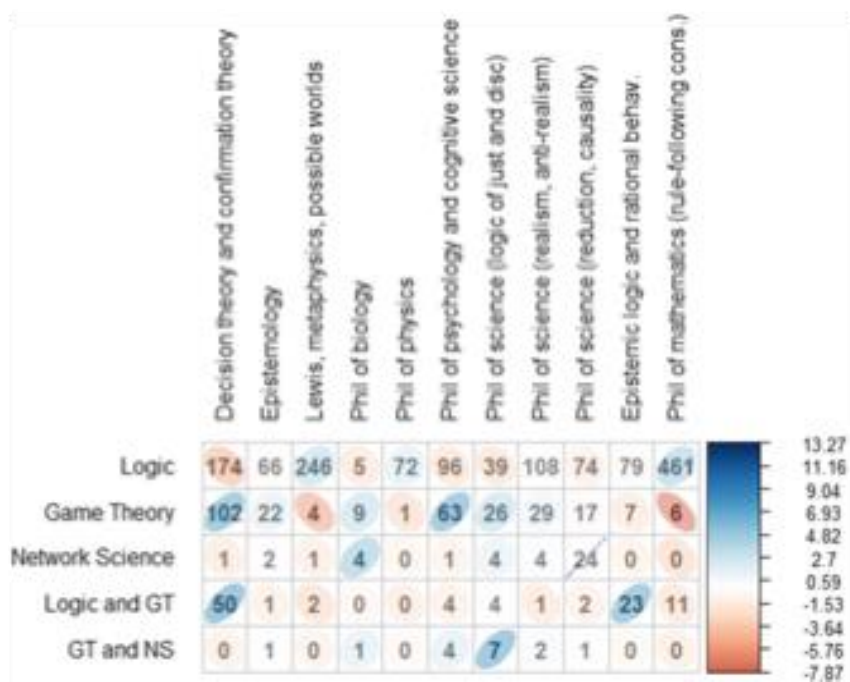
labels seem to decrease)⁶. Moreover, various recent articles take advantage, like Noichl’s one, of machine-learning statistics (i.e., in a certain sense, they too do employ formal tools) and show with a high degree of evidence that the weight and diffusion of mathematical methods *different from logic* are increasing in a frame of overall growth of formal tendencies in the practice of contemporary philosophy. Fletcher, Knobe, Wheeler & Woodcock, for example, show this result concerning the big family of theories of probabilities:



Papers in each family by time period. Error bars show standard error.

In a similar fashion, proposing a graphic representation of distribution analogous to Noichl’s one, Bonino, Maffezioli, Petrovich & Tripodi present the impact of game theory (GT) and network sciences (NS):

⁶ Chalmers sustained in 2015 that in philosophy “there is little convergence because participants are talking past each other. Each side is using key terms in different ways and each is correct where their own use of the term is concerned. [...] For example, I think many debates in the philosophy of free will and the philosophy of language have a significant verbal element. And I think that resolving verbal disputes can lead to philosophical progress. Still, often when we clarify the key terms in a partly verbal dispute, we find that a substantive dispute remains. And there is a core of fundamental questions (including many normative questions, as well the mind–body problem and other issues involving ‘bedrock’ philosophical concepts, in the terms of ‘Verbal Disputes’) for which the diagnosis of a verbal dispute seems quite implausible”. Chalmers, 2015, 26. See also Capellen, 2017, insisting on comparing philosophy with social instead of natural (or hard) ones.

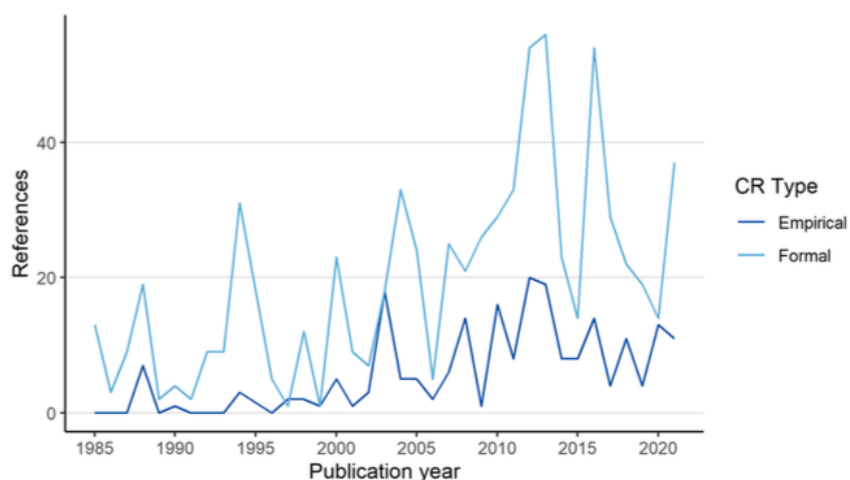


Association plot between corpora and research areas.

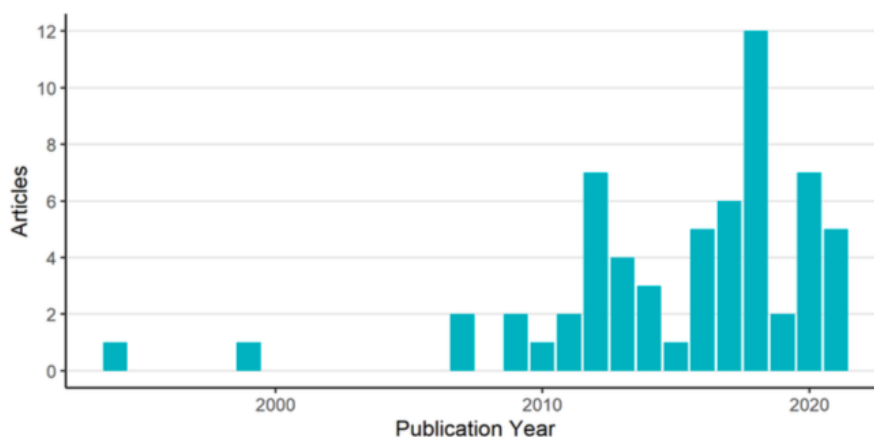
The strength and direction of the association is shown by the size, orientation, and color of the ellipses.



Diffusion over time of papers citing game theory in the reference map of philosophy.



Citations to formal and empirical references by publication year of the citing paper (game theory).



Number of philosophy articles citing network science over time.

In a possible project grounded on these and other similar databases, it would be interesting to dispose of a set of synchronic surveys⁷, like Noichl's one and the first quoted from Bonino *et al.*, but regarding repartitions in sub-areas during previous historical periods. We could compare them with another hypothetic set of

⁷ This kind of surveys became very common during the last three-four years; their increasing diffusion witnesses the importance that the empirical web-researches are gaining for philosophical and metaphysical arguments in general.

statistical representations, similar to the last three graphics and to the one presented by Fletcher *et al.*, where the philosophical production is analyzed in terms of the historical increment of formal methods (in terms of absolute quantity and distributional amplitude). Eventually, elements of continuity with on-run scientific projects could be added to the criteria, not confining these last to the employment of formal tools. I guess that confronting the data, we would state a certain complementarity between two opposite tendencies - one centrifugal, so to say, and another centripetal. Balancing the diachronic dispersion, where the reconnection with the historical “origin” would need more and more far-reaching arms in the citational trees, rendering the rooting implausible (or even impossible), we would notice the emergence of a different kind of continuity, proving itself as progressively more evident comparing past with present pieces of evidence. We could render the tendency appreciable through synchronic cuts in the *data corpus*, revealing the emergence of common patterns in numerically growing co-planar areas under some criteria. We can call this general tendency *scientificity of philosophy*. A definite historical characterization should better explain it, revealing a common matrix in this historical evolution.

Besides this hypothetical empirical research on actual data, we could also propose a kind of *simulation* dealing with already recognizable common patterns in the evolution of both contemporary philosophy and science - physics, for example. Also in this case the cocitation network could serve as a reliable basis. The similarity matrixes would regard the subdivision of labor among dependent and/or relatively autonomous areas inside a well-defined and homogeneous discipline. An idealized image of the future scientific philosophy would emerge through a projection of the data, presenting possible relations between general and local principles. Very general areas such as philosophical methodology and epistemology - if we will be, as I imagine, justified by the data in considering their historical dynamics not essentially different from those of other upper fields of scientific research - are supposed to evolve, although with different rhythms and

consequences in comparison with the local branches. In the same sense, the role and the importance of these far-reaching fields inside the whole domain of philosophy could vary historically, and many related emergent issues could be contingently decided through heuristic reasoning involving other sub-areas - in the same way in which the theories of principles are discussed in physics⁸. Proceeding with the analogy, we can aspect more or less slight epistemological and methodological differences at the local levels, due to the specific features of the (sub)areas. In the end, the relations between locality and generality would reveal quite complex, and a certain independence of the local practices would probably be recognized as a principle of possible growth⁹.

⁸ Concerning the quasi-monotonic nature usually attributed to the *theories of principles*, it is important to underscore that the *ex definitione* disputability of all theories as possibly not fundamental (and in extreme cases, their revocability as untrue) should be modally compatible with the fact that if a theory is a theory of principles, not a simple dynamic theory, it must obtain forever and in every possible world: a theory can be necessarily true and necessarily necessary true while simply true. Physical and metaphysical necessities are not always clearly differentiable. See Williamson, 2017. The problem, relatively to Lewis' modal realism, can be found also in Williamson, 2013: "Another objection to Lewis's modal realism is that it implies that laws of nature vary across worlds, and therefore across spatiotemporal systems. Since proposed fundamental laws of nature are normally intended to hold unrestrictedly, his modal realism is incompatible with fundamental physical theories on their intended interpretation. Although it may be replied that we really only have evidence about the physics of our own spatiotemporal system, the evidence for fundamental physical theories is considerably stronger than the evidence for modal realism as a basis for theorizing about the physics of other spatiotemporal systems".

⁹ See Williamson, 2013, 424: "Some metaphysicians claim that criteria such as simplicity and elegance are applicable only to theories about absolutely fundamental matters [...]. That claim embodies a serious methodological error, whatever exactly is meant by 'absolutely fundamental'. Abductive criteria such as simplicity and elegance are used in theory comparison throughout the special sciences. Indeed, they are methodologically required, for without them the special sciences would become hopelessly bogged down in a proliferation of ad hoc, gerrymandered high level theories. [...] Moreover, the constraints run both ways. True theories in fundamental science must be consistent with what we know at higher levels".

Nevertheless, partial unification and general unification projects could be characterized based on a *weak holism*¹⁰, a general presupposition of consistency between any two theoretical statements forming part of our shared knowledge.

The most important fact to notice would be that the permanence of principles at all levels cannot be guaranteed in advance, as if they would constitute irrevocable tenets beyond any possible doubt. Everything can be questioned, being subject in different forms to contingent practical, theoretical and general epistemic limits, but logically speaking, not everything can be questioned simultaneously.

From these considerations, we can deduce that if *de facto* we do not dispose of a defined organizing center of our actual philosophical production, it is also true that *ex principio* for a scientific philosophy, no transcendental argument in favor of a general *Weltanschauung* can nor should be given. In the words of Williamson, we have *no cartesian home* (no aprioristic privileged access to “fundamental knowledge”)¹¹. But it follows, too, that common background assumptions should result determinable independently from the bibliographical data, starting from the ideal basis of objective knowledge and logically sustained thematic relations, so it should be possible to propose general programs.

¹⁰ See Boghossian, *Analyticity Reconsidered*, 1-27, in Boghossian, Williamson, 2020. See Williamson too in *ibidem*, 131: “Quine later restricted his holism to a moderate version that permits some discrimination amongst our beliefs. Nevertheless, at least this mild form of global holism is surely right: no two of our beliefs are in principle epistemically insulated from each other. // To make progress, we need a more developed model, on which an individual belief has its own epistemic status, but that status depends in principle on the epistemic status of each other’s belief. Holism is far more plausible as a claim about the pervasive interdependence of epistemic status than as the claim that only whole theories have epistemic status. The obvious and best-developed candidate for such a model is some form of Bayesian epistemology”.

¹¹ Williamson, 2002, 94: “[...] we are cognitively homeless. Although much is in fact accessible to our knowledge, almost nothing is inherently accessible to it. However, it is first necessary to sharpen the issue, to make it more susceptible to argument”.

I. Science, philosophy, realist descriptions and norms

Hannes Leitgeb, explaining the change of subtitle of the journal *Erkenntnis* in 2013, dedicated a famous article to the contemporary philosophical scenario, reintroducing the expression “scientific philosophy” as a conceptual extension of the more vague (and maybe already historically inapplicable) label of “analytic philosophy.”

We recently changed the subtitle of Erkenntnis from “An International Journal of Analytic Philosophy” to “An International Journal of Scientific Philosophy.” In a sense, this was old news: “scientific philosophy” had been among the terms of art that characterized the Logical Empiricist movement from the start—exemplified by the work of Rudolf Carnap and Hans Reichenbach, the founders of the journal. But it was also good news: “scientific philosophy” expresses the attitude of philosophizing that is associated with the journal more adequately than the less specific “analytic philosophy.” And I am convinced that one important way of doing philosophy in the future will be scientific.

Although manifesting explicitly in his programmatic intentions the central importance of the logical-empiricist tradition, the author underscores some relevant differences. In particular, we can contrast the proposed scientific character with the idea of *philosophy for the sake of science* which was defended by the members of the famous old European circles (especially by Carnap) and which implied a pretty strong accent on the auxiliary nature of our discipline. What Leitgeb proposes is much more the idea of a “*philosophy done (partially) by scientific methods*. This is perfectly compatible”, the author continues, “with philosophy being a discipline in its own right, possessing its own concepts, questions, problems, and hypotheses; with philosophy not necessarily being pursued, whether on the metalevel or on the object level, with the aim of facilitating scientific progress (though it is nice if this is a by-product)¹²”. This - so to say - lightweight idea of *scientificity* is quite actual, well adaptable to the methodological freedom and the

¹² Leitgeb, 2013, 268.

elasticity of principles presented in the last paragraph in relation to the possible evolution of contemporary philosophy. I agree with it to some extent. The fact that philosophy now tends to *scientificity* and that we can study its structural transformations through analogies with the structures of mature natural sciences does not *per se* imply that it should be considered a science itself. In this sense, Leitgeb's refusal of Quinean reductionisms (paradigmatically: of epistemology to psychology) can be sustained through statistical observations as well as through theoretical arguments.

Other important critical stances towards logical empiricism emerging in this project include the (although constrained) rehabilitation of metaphysics in general and realist ontologies in particular¹³, as well as a reconsideration of the conceptual nature of philosophical inquiry, intended as a progressive enterprise variously related to the growth of shared knowledge. Nevertheless, following Carnap's "voluntarism," philosophical activity remains centered in the engineering of "merely expressive" component of discourse, relatively independent from "worldly" topics¹⁴. In the same *revisionist* spirit, Leitgeb limits "the analytic-synthetic distinction for specific constructed (artificial) languages ('analytic-for-L' with fixed 'L')." ¹⁵

¹³ Specifically Ontic Structural Realism. See Ladyman & Leitgeb, 2007, and Leitgeb, 2016: "Metaphysics is the philosophical discipline that constructs, studies, and applies mathematical-empirical conceptual frameworks, subject to the metaphysical attitude: it endorsing a framework to be true and useful and recommending it to be presupposed. The truth aspect of that presupposition consists in presupposing that the set of worlds of a framework is true simpliciter—that the empirical world conforms to one of the possible worlds of the framework". This remains for Leitgeb an open question, as later underscored: the pure possibility, generally accepted nowadays, that metaphysical assertions can have some substantial meaning outside of linguistic conventions.

¹⁴ *Rudolf Carnap*, Stanford Encyclopedia of Philosophy, rel. to Jeffrey, 1992. <<https://plato.stanford.edu/entries/carnap/>>

¹⁵ *Ibidem*, <<https://plato.stanford.edu/entries/carnap/carnap-quine.html>> B. Carnap versus Quine on the Analytic-Synthetic Distinction

However, I consider more critical another consequence of this conception, which does not seem very much enlightened in the cited article: the *methodological* continuity between philosophy and science in terms of the use of formal methods can't be sustained without implying at the same time a certain *epistemological* commonality between them¹⁶. Among other aspects, the generally increasing practice of modeling, recognized and adopted by Leitgeb, can be presented as evidence to sustain this thesis.

The specificity of philosophy, following Leitgeb, should be identified first in its aim to “rational, intellectual constructions that realize norms of rationality as such (and no other norms)¹⁷.” Still, not - or so it seems to me - in its putative *special epistemological status*, which was robustly affirmed, on the contrary, during the first seasons of analytic philosophy. As seen, Leitgeb attributes a fundamentally normative character to his philosophical project. However, the relationship between descriptive and normative statements in the semantics of scientific discourse and all the systemic organized areas of knowledge, in general, is not at all easy. It is not easy to establish, in particular, to what extent the intended normative character could help to determine metaphysics more precisely. In this frame, metaphysical thinking would probably remain an unspecified armchair adoption of absolutely general

¹⁶ We can include principles of abstraction, implying at their turn the introduction of well-defined criteria of identity; introduction of well-defined relations, among which equivalence and order; and, in general, the bootstrapping properties implied in the determination of higher-level concepts. In this sense, Leitgeb's conception of conceptual improvement and engineering can be confronted with some main these of Carey about thematic generalization in cognitive sciences (Carey, 2009). See also Leitgeb: “just as in any scientific endeavour, abstractness, simplicity and idealization are often exactly what we want in philosophy, and there is nothing wrong about this as long as we keep in mind that, for the sake of the general view, we forgot about certain properties and we simplified or idealized others”. Leitgeb, 2009, 341.

¹⁷ “The study of the norms and presuppositions of rationality informs this kind of normative project and is therefore crucial for it. The norms and presuppositions are themselves subject to rational (re-)construction again”. Leitgeb, 2019, 12.

entities and properties as limit notions, which sometimes orient natural sciences despite remaining outside their objects' domain¹⁸.

Already during the last decade of the 20th century, Timothy Williamson affirmed the then-revolutionary principle of an *epistemological anti-exceptionalism* of philosophy, i.e., the idea that philosophy is “much less different from other sciences in nature and methods than many philosophers like to think” (Williamson, 2021, xxiv). In particular, it should not presuppose a special kind of epistemic access or a specific object (*a priori* conceptual contents / propositional structures).

It is not so much the mentioned Quinean idea of *naturalization of epistemology*, as the idea of a scientific philosophical activity with well-enough defined boundaries instead, but without implying with this a *complete* thematic independence of philosophy, in conformity with the methodological and the epistemological continuity that it maintains with the other sciences (Williamson describes it as a kind of overlapping)¹⁹. This *not total* thematic independence attributed to philosophy is the same that can be reasonably attributed, with growing certainty, to *all the existing sciences*, after the historical overcoming of a fundamental physicalistic reductionism²⁰. From an epistemological point of view, this is the main reason to adhere to the *weak holism* I introduced above: “a moderate version [of holism] that permits some discrimination amongst our beliefs. [...] at least this mild form of global holism is surely right: no two of our beliefs are in principle epistemically insulated from each other²¹.”

¹⁸ So to say, in some *neighborhood* of the Carnapian *discursive framework*: a sort of hybrid or undetermined condition due to the lack of a clear and consistent definition of internality vs. externality of metaphysical notions in Carnapian ontologies in general. See Leitgeb, *Rudolf Carnap*, Stanford Encyclopedia.

¹⁹ See Williamson, 2021, 6 and following.

²⁰ We could talk of methodological “contaminations”) between the different sciences in the frame of a *large* conception of science. The application of the biological concept of *evolution* in cosmology could be a good example.

²¹ Williamson, *How Deep is the Distinction between A Priori and A Posteriori Knowledge?* In Boghossian & Williamson, 2020. Here the whole paragraph, 131:

But how to define more precisely what is contemporary philosophy *about* as a general discipline, especially in the area of metaphysics? What differentiates it from the thematically more defined natural sciences? Which should be its distinctive methods?

We can recognize some general circumstances and/or trends resulting from medium-term historical changes: 1) more well-defined topics in partly autonomous areas. The thematic subdivisions sounded almost entirely arbitrary in the 80s and 90s, particularly in Europe: the first-line role played by the hegemonic pretensions of the main different living traditions was too significant to admit a severe assumption of general criteria of subdivision²². Classical (not naturalized) phenomenology, various kinds of marxism, existential philosophy, and poststructuralism were all quite influential, and their contrasts were more evident than ever. In this sense, the actual situation resembles much more that of classical pre-Kantian times - a continuity that Williamson not only notices but also theoretically sustains and promotes. 2) more methodological freedom compared to the recent past, leading to disciplinary overlapping situations described above. If philosophy always remains a fundamentally armchair activity, it is a hypothesis

“On Quine’s picture, a theory faces the tribunal of experience collectively, not sentence by sentence. Taken at face value, the image implies that two consequences of a theory cannot differ in epistemic status. But that is absurd. For Quine, the totality of a person’s beliefs constitute a theory (perhaps an inconsistent one), their total theory of the world [...] Quine later restricted his holism to a moderate version that permits some discrimination amongst our beliefs. Nevertheless, at least this mild form of global holism is surely right: no two of our beliefs are in principle epistemically insulated from each other. // To make progress, we need a more developed model, on which an individual belief has its own epistemic status, but that status depends in principle on the epistemic status of each other’s belief. Holism is far more plausible as a claim about the pervasive interdependence of epistemic status than as the claim that only whole theories have epistemic status.”

²² A good example is maybe that of “philosophy of language”, a label that often, in Europe, did not cover just the analytic tradition, and was commonly applied to absolutely different contents. General critics of the subdivision of labour were furthermore proposed in terms of Foucaultian archaeology and Heideggerian existentialism, for example.

that we can freely question primarily on the ground of this freedom and its long-term effects. The continuity with evidential practices of empirical nature has been detected in many fields, among which, with great clarity, cognitive sciences (see paragraphs II and III)²³. Although particularly central in philosophy, mental experiments are also commonly used in the sciences, and there is no epistemological or metaphysical “barrier” separating in principle mental from observable empirical experiments. 3) the emergence of *normative* rational constructions of arguments, which not rarely come together with a renewed interest in the recent history of philosophy (*descriptive* reconstruction). These circumstances favor a complementary treatment of the two kinds of discourse and, in the end, could motivate a general, consistent interpretation of normative methodology in relation to other descriptive aspects of metaphilosophy.

Concerning this last point, we can add with statistical accuracy that the conception of a progressive nature of philosophical knowledge became mainstream during the last decade²⁴. Furthermore, quasi-scientific philosophical progress in the traditional topics of logic and epistemology can be highlighted contrastively, i.e., through a critique of the distorted self-portraits of analytic philosophy which circulated in the past. The main object of these critics should be a way of doing philosophy conceiving its own function as a pure and neutral clarification of concepts - precisely when the area of logic was experiencing the most

²³ See Carey, 2009, 4: “My goal here is to demonstrate that the disciplines of cognitive science now have the empirical and theoretical tools to turn age-old philosophical dilemmas into relatively straightforward scientific problems. I shall illustrate the progress science has made in resolving debates about the existence, nature, content, and format of innate knowledge. I consider the thesis that conceptual resources are continuous throughout the life span”. Her position about the relation between philosophical and scientific questions is opposed to some fundamental anti-philosophical stances arguing for the progressive disappearance of philosophical questions in favor of just scientific ones. A position championed, for example, by Hawking, 2010.

²⁴ See the results of PhilPapers Survey 2020 in relation to *Philosophical Progress*: <<https://survey2020.philpeople.org/survey/results/4958>>

impressive historical growth ever, bringing about absolutely *new* knowledge. In this way, in the frame of a historiographical reconstruction of analytic philosophy, analyzing the self-representations provided by the sub-currents during the *last* century can favor hypostatizing a unitary form of doing philosophy in *this* century. Following this argument, we should not interpret scientific philosophy only as the ideal point of arrival of some contemporary tendencies but also as what we are projecting right now through critical reconstructions of our past. As we will now observe, the two cited authors could converge on this. In both, anyway, we find revolutionary intentions (about epistemological status, formality, and *scientificity*) as well as a certain conservativeness (in the link with positivism, for Leitgeb, and in the fidelity to the pre-Kantian topic structure, for Williamson).

As a last remark, it can be added that the influential positions of both authors imply metaphysical realism (maybe that of Williamson in particular), presenting some lines of continuity with the conceptions of knowledge and being proper of Kripke, Armstrong, and Lewis²⁵. Because of their anchorage to an older ontological tradition, the conceptions of these last authors seemed quasi-anachronistic compared with the more instrumentalist ontologies typical of positivism. Nevertheless, recent metaphysics (whose definition, as seen, proves problematic to achieve in a pure normative-constructivist conception of philosophy) treats in detail individuals, kinds, necessity, possibility, and modality in general²⁶. In other words, knowing something about the way the world is, is generally taken to be equal to knowing something about the way it *could* be. Consequently, Leitgeb and Williamson highly estimate the analysis of counterfactuals – a crucial topic also because counterfactual reasoning proved essential for the actual cognitive sciences and philosophy of science in general, especially in the frame of computational and simulative research-projects employing model-building.

²⁵ See Leitgeb, 2017, and Williamson, 2021.

²⁶ A clear and consistent treatment of metaphysical semantic questions in conformity to a normative projects can be found in Leitgeb, 2012.

In this minimal survey of contemporary conceptions of scientific philosophy, we can find an important antecedent of both Williamsonian and Leitgebian positions in Paul Thagard, *Computational Philosophy of Science*, 1988. Indeed, it is probably in the growing importance of the philosophy of science in those years of change²⁷ that we can trace in the best way the genesis of some actual leading tendencies. Computational philosophy tries to catch *real aspects* of the world through AI and empirical psychology-related modeling. Specifically, it treats the objective processes constituting our ways of conceptualizing potentially all aspects of human experience in a consistent and transmissible knowledge system; its objects, so to say, are “second-degree” aspects of reality. In this perspective, rational reconstruction, analysis of cognition, metaphysic determinations, and data observation and -analysis are tightly connected, leading to an inevitable questioning of the philosophical methodology’s pure “armchair” nature.

*Computational philosophy of science is an attempt to understand the structure and growth of scientific knowledge in terms of the development of computational and psychological structures. It aims to offer new accounts of the nature of theories and explanations, and of the processes underlying their development. Although allied with investigations in artificial intelligence and cognitive psychology, it differs in having an essential normative component.*²⁸

To the extreme generality of the object of investigation (*theories and explanations* of all sorts) responds the research of a general set of principles with the final aim of determining how theoretical reasoning *should* develop as a structure conveying objective knowledge. In a metaphylosophical perspective, it is evident that inside of this project different philosophical accounts can be confronted heuristically, and that in this way a kind of *conceptual analysis* very different from the positivist one could emerge.

²⁷ The last two decades of the 20th-century assisted to the emergence, citing Lee Smolin, of the so-called *Trouble with Physics*.

²⁸ Thagard, 1988, 9.

Thagard analyzes the nature and importance of the “normative component” and the continuity of normativity and descriptivity in a strong-realistic metaphysical frame²⁹. Different conceptions of the continuity and/or discontinuity between the two types of assertion, as mentioned, are indeed observable in today’s literature, with no final default position resulting nowadays. The contrast between Williamson and Leitgeb offers a good example, with the former more inclined to deflate the difference and the latter affirming the essentially normative character of his scientific-philosophical project. I argue that the relation between normative and descriptive dimensions (in eluding the description of both the topics and their histories) in the frame of the scientific philosophy of science represents the most fruitful point of departure if we want to clarify the complementarity subsisting between metaphilosophical descriptions and methodological prescriptions concerning recent philosophy in general. This reflection is grounded in the recognized continuity of philosophy and (natural) sciences. In this perspective, Thagard is a forerunner of a possible contemporary conception: neither normativity and descriptivity constitute an irreducible opposition, nor is necessary a reduction of the former to the latter, as many robust realists pretend.

While Leitgeb quotes him as a precursor³⁰, the continuity of Thagard’s arguments with Williamson’s ones is evident. First of all, the overlapping of scientific and philosophical activity and the Williamsonian tenet of cognitive limitations appear both central in this project (see later too, part III):

[...] computational philosophy of science overlaps as much with cognitive psychology as it does with scruffy AI. Even its normative prescriptions about how science ought to be done should take human cognitive limitations as starting points [...]

Second: the opposition between normativity and descriptivity is not absolute, and the author underscores the crucial philosophical importance of their reciprocal grounding:

²⁹ Thagard, 1988, Chapter 7, 113-137.

³⁰ Leitgeb, 2013, 269.

Yes: we can arrive at normative principles of reasoning by reflection on descriptions of how everyday and scientific reasoning actually works. Such reflection does not derive the normative from the descriptive; there is no immediate deduction of ought from is. Nevertheless, descriptive studies contribute substantially to establishment of normative principles³¹. [...]

Third: in conformity to this principle, Thagard criticizes the “narrow” concept of *reflective equilibrium*, not applicable to serious theories. The “wide” one, which includes “background theories and beliefs,” seems to answer Williamson preoccupations about “missing half the picture” by not “mentioning our interactions with the external world”:

TW.: in my view, the conception of philosophical methodology as directed towards reflective equilibrium suffers from the usual defects of internalist and coherentist epistemology. It ignores crucial questions about where our evidence comes from. To discuss the methodology of natural science as directed towards reflective equilibrium without mentioning our interactions with the external world through observation and experiment would, rather blatantly, be to miss half the picture. [...] Our knowledge of the world includes many findings of natural science; it also includes much else besides. In principle, our evidence base for abduction in philosophy comprises all of that knowledge

PT.: Talk of reflective equilibrium begins to look only like a smokescreen for a relatively sophisticated form of logical and methodological relativism. [...] reflective equilibrium is at best incidental to the process of developing normative principles. Moreover, when the dispensability of equilibrium considerations becomes evident, [...] emphasis on the social component of justification becomes avoidable, along with its potentially relativistic implications. [...] in the

³¹ “The two base cases are historical philosophy of science and wide reflective equilibrium in ethics, which are used to suggest a model for the more complex case of deriving logical principles from psychological practice. Finally, I generalize from all three cases to a general model of how to go from the descriptive to the normative.” Thagard 1988, 115.

*psychology/logic case we can look for a process of development of inferential practice and normative logical principles as the result of critical assessment of both. In the logical case as in the ethical, we are seeking, a wide rather than a narrow reflective equilibrium. This means that we want coherence not only of inferential practice and normative principles but also of both of these with background theories and beliefs*³².

There is only *one semantic frame* (no normative semantics nor pure normative knowledge as *practical reason*). The norms of rationality partially depend on our limited objective knowledge and could be justified on the basis of this same limitedness. In a certain sense, *normative forms substitute the unreachable completeness of factual knowledge*. For this reason, we do not presuppose a primacy of reasoning (which norm is that of validity) over judging (which norm is simply truth). We recognize in the necessity of principles of correct reasoning the limits of our capacity to judge, instead.

I hope these examples give us a clear enough idea of the kind of *scientificity* which became accessible in the particular case of philosophy. Let's now enter some historical details.

II. Concepts: Philosophy of Language, Philosophy of Mind, and Cognitive Sciences

We saw how scientific philosophy opposes itself to all forms of radical relativism (the conception that two interpretations which result opposite at the level of fundamental principles can both be

³² Thagard, 1988, 115, 125, and Williamson, 2021, 402. In this last, see 7 too: "A popular remark is that we have no choice but to start from where we are, with our current beliefs. But where we are is not only having various beliefs about the world; it is also having significant knowledge of the world. Starting from where we are involves starting from what we already know, and the goal is to know more (of course, how much more we come to know cannot be measured just by the number of propositions learnt). To characterize our method as one of achieving reflective equilibrium is to fail to engage with epistemologically crucial features of our situation. Our understanding of philosophical methodology must be rid of internalist preconceptions".

true). Its central tenet consists of the uncompromised, common-sense friendly statement of *the world's fundamental (although limited) knowability*. Different declinations of realism can be considered consistent with this principle, such as rationalist realism about ideas, robust metaphysical realism, structural realism, pragmatist realism (Pierce), weak realism (Maddy), and so on. The categorial interpretation of theories, too, should be accepted in this perspective³³.

The methodological-epistemological holism that we could derive from the tenets of the general objectivity of the argumentation, the revocability in principle of the theorems, and an at least modest realist disposition in the descriptions, is the best basis that we dispose of to affirm the *scientificity* of philosophy (so to say, the *minimalist* definition). It proves our way of doing philosophy deeper linked as ever before to the most evident and fundamental forms of scientific praxis and communication.

The majority of the actual philosophers pretty much accept that the fall of logical empiricism (at least in its “classical” or “radical” forms) is mainly due to the untenable division between philosophy and sciences that it proposed. This last principle notoriously corresponds to a subdivision of language in empirical (synthetic, a posteriori) vs. logical (analytical, a priori) propositions / propositional components - itself only apparently a separation of empirical nature, and indeed a metaphysical principle. The revival of metaphysics and meta-metaphysics after the 50s³⁴, too, is commonly interpreted along this line. Although not universally accepted, the ongoing criticism of analyticity represents an index of the same historical change³⁵. Leitgeb, as mentioned above, proposed a detailed interpretation of these topics, permitting us to accept the Carnapian heredity in the actual scientific philosophy without falling into the relative dead-ends. It seems to me, anyway, that a more detailed analysis of the renewed importance of

³³ See Halvorson, 2019. I discuss this topic in a forthcoming article: Boccafogli, 2022.

³⁴ See Chalmers, Manley, and Wasserman, 2009.

³⁵ See Boghossian & Williamson, 2020.

metaphysics is required if we want to understand the whole historical panorama, and by means of it our present.

In the historical overcoming of logical empiricism (however relative and partial it could be conceived), it is essential to notice a shift of interest in the philosophy of science. From the initial hierarchical preeminence accorded to fundamental physics, the actual interest ranges practically over all sciences - not lastly over cognitive sciences, as already mentioned. Different planes of emergence are now commonly recognized, and different structural relations subsisting between theories are often disaccording with reductionist principles³⁶. We are not assisting in a progressive affirmation of anti-physicalism nor a radical change of perspective from a “headless world” (reconstruction of mental functions of the human brain on physical bases) to “the world in the head”³⁷ (a reinterpretation of all sciences, in particular of physics, in terms of cognitive structures). It is much more the in-depth questioning of the ultimate nature of the “physical” world and its possible knowability (on the one side), and the same concept of “concept” (on the other). In the first direction of reading, it became clear that today’s descriptions of physical reality do not satisfy the positivist assumptions of observability nor the derived deflationist conceptions³⁸. In the second, the conceptual reality derived from the postulation of an *a priori* form of knowledge was hardly criticized. In particular because it was supposed to be expressible in judgments considered, without further specifications, “true in virtue of meaning.”³⁹

³⁶ The “second dogma” in Quine, 1951.

³⁷ I’m quoting playfully the subdivision I parts of Canetti’s roman *Auto da Fé (Die Blendung)*, 1935.

³⁸ See, among many others, the ontological considerations in the introductions of: Dieks (ed., 2006) and Landry and Rickles (ed. 2012).

³⁹ A vast debate developed about this centra argument, in particular in relation to the metaphysical character of this last assertion. I limit myself to quote the contributions of Paul Boghossian & Timothy Williamson (*Debating the A Priori*, 2020), and Gillian Russell (*Truth in Virtue of Meaning*, 2008).

Employing mental experiments and abductive practices to justify the adoption of more robust metaphysical frames, not exhausted by conventional aspects, is probably the best way to sustain (although implicitly) the anti-exceptionalist position. The previous presuppositions about the purely conceptual dimension of philosophical thought (the counterpart of a “deflated” image of external reality, conceived as a sort of philosophical metatheorem) disappeared from the mainstream interpretations of mind and cognition to the point that some philosophers proposed to expel the same concept of “concept” from both the main objects of interest of philosophy and its fundamental lexicon, so effacing completely every sort of potential “super-domain” of access to truth⁴⁰. But this is maybe too a radical solution to avoid the adverse effects of the logical-empiricist metaphysics - a too drastic change against the most common definitions of philosophy as “conceptual analysis.” It would be better to interpret concepts as particular things of the world, not ontologically nor epistemologically radically different from all the others, as Thagard seemed to suggest already in the 80s. Still, their philosophical treatment adopting a historical perspective continues to play a central role in the definition of philosophy. The interplay between different levels or dimensions of objectivity in philosophical modeling (i.e., modeling existing concepts of reality vs. modeling reality itself, possibly producing new concepts) assumes a new centrality, as Leitgeb excellently shows by quoting the book *Bayesian Epistemology* by Bovens and Hartmann:

[It] includes lots of illustrative examples of so-called Bayesian networks that are used as such “prototypical” models by which more general claims about reliability, confirmation, empirical underdetermination, testimony, and the like can be supported. These are models in the sense of the scientists, not of the logicians; and they are not explications in the Carnapian sense either, for they are not models of concepts; and, by

⁴⁰ See for example Williamson, 2021, xxxiv- xxvi.

*idealization, they distort reality (though in a good way), whereas explicata are supposed to be the new and better conceptual reality.*⁴¹

Scientific models idealize reality to underscore and better understand some central aspects of it; in this sense, they favor the formation of concepts about a “possible reality,” slightly different from our own but conveying a higher degree of clarity. Considerations of this kind show essential changes in the interpretations of concepts if we compare them with 20th-century philosophical analysis. All the new arguments’ advantages emerge through such a comparison. We could describe this emergence by employing the term *historical dialectic* - if it were possible to impede it from conveying idealistic absurdities.

We can face in the best way the central issues of knowledge, concepts, and cognition if we adopt the theoretical frame of the contemporary philosophy of mind / cognitive sciences (philosophy both *inside of* and *about* CS⁴²). CS reached certain stability and presented great results - in particular: effective models - in continuity with other experimental sciences, particularly neurophysiology. In synthesis, in this domain, we can find a solid underpinning for the scientific turn in philosophy and simultaneously some good reasons for overcoming the analytic paradigms in a new direction.

We can enunciate some basic principles of contemporary cognitive sciences, which can be useful for understanding the general interplay between philosophy, formal sciences, and natural sciences.

- First of all, in representing and differentiating knowledge, cognition, and consciousness, we usually adopt a *default* physicalism, which can be defined as *Naturalism in Cognitive Sciences*:

Naturalism is the view that it is a default that consciousness has a scientific nature (and that similarities in consciousness have scientific

⁴¹ Leitgeb, 2013, 273.

⁴² To understand better the kind of relation subsisting between philosophy of cognitive sciences and philosophy as a part of it, see Thagard, 2009.

natures). I will assume that the relevant sciences include physics, chemistry, biology, computational theory, and parts of psychology that do not explicitly involve consciousness. (The point of the last condition is to avoid the trivialization of naturalism that would result if we allowed the scientific nature of consciousness to be...consciousness.) I will lump these sciences together under the heading “physical,” thinking of naturalism as the view that it is a default that consciousness is physical (and that similarities in consciousness are physical). So naturalism = default physicalism, and is thus a partly epistemic thesis. Naturalism in my sense recognizes that although the indirect evidence for physicalism is impressive, there is little direct evidence for it. My naturalist is not a “die-hard” naturalist, but rather one who takes physicalism as a default, a default that can be challenged.⁴³

In different forms, we find this position held by the most influential cognitive scientists and philosophers of mind, such as Fodor, Gazzaniga, Carey, Anderson, Damasio, and Thagard.

- Second point: in contrast with *conceptual role semantics*, which, anyway, in specific environments of research continue to exercise a significant influence⁴⁴, we usually present knowledge through *propositional aptitudes* and *externalist semantics*⁴⁵. It’s a central principle: thanks to the differentiation of the functions and *presentation modes* of consciousness, we can describe some mental states (in particular, conceptual understanding in human and animals) as propositional (*access-conscious*) and irreducible to phenomenality. In this way we avoid falling into the short-cuts of implausible definitions of knowledge as a first-person experience (*phenomenal consciousness*) + intersubjectivity⁴⁶. It is evident, that these methodological perspectives can’t but influence our basic positions in general ontology and metaontology.

⁴³ Bock, 2007, 402.

⁴⁴ See Carey, 2009, 5-7 and 514-423, with direct reference to the work of Ned Block.

⁴⁵ See Block, 2007, 22, 66-70, 103-107, matching externalist semantics with Putnam-Kripke-semantics, based on *The Twin Earth Thought Experiment*.

⁴⁶ For an incisive critic to the (semi-naturalized) enactivist conception of the mental and its phenomenological origins, see Block, 2007, 363-375.

- Third and last, we distinguish sharply the different states of *unintentional knowledge, intentional reflective knowledge, phenomenal versus access consciousness, awareness, aware and not aware cognition, conscious perception, unconscious vs. not-conscious not-aware perception*, and some others through both conceptual argumentations *and* empirical experiments, i.e., in conformity with some basic heuristic tenets *and* on the ground of what we can know and proof about their references (see paragraphs (I) and (II) above, in particular the analogies between Williamson's and Thagard's projects). The philosophical research in cognitive sciences has today overcome the old idealistic positions and transcendental arguments about the constitution of the world⁴⁷. Several questions about the nature of physical objects and the complexity of biological entities are

⁴⁷ See Kästner, 2017, in particular Chapter 12, *Mere Interactions*. See also 14.10, *Conclusion*: "I suggested a somewhat weaker reading of Woodward's interventionism: difference making interventionism (DMI). The basic idea is that we can modify interventionism's core definitions in such a way that manipulability of some factor Y through intervention into some other factor X does not necessarily indicate a causal relation. Instead, any kind of dependence relation can be indicated. This is to say that if Y wiggles along when we wiggle X, we can conclude that Y depends on X, or that X is relevant to Y. But based on the observed manipulability relation alone, we do not know whether this is due to a causal, constitutive, or some other kind of dependence between X and Y. [...] we can employ such difference making interventions to uncover general dependencies which include intralevel causal as well as interlevel constitutive ones. Notably, this does not only render interlevel manipulations compatible with mechanistic explanations but also with the common assumptions that cognitive phenomena are multiply realized and supervene on the neural processes implementing them." (Kästner, 2017, 578-579 and 589-590). See also Block, 2017, 47, in relation to *philosophical* physicals and/or behaviorism: "Of course, it is possible that the type-to-type correspondences required by behaviorism or by physicalism should turn out to obtain. The present point is that even if behavioral or physical states are in one-to-one correspondence with psychological states, we have no current evidence that this is so; hence we have no warrant for adopting philosophical theories which require that it be so. The paradox about behaviorism and physicalism is that while most of the arguments that have surrounded these doctrines have been narrowly "conceptual," it seems increasingly likely that the decisive arguments against them are empirical".

emerging more and more clearly. No idealistic nor behavioristic interpretation of the mind can capture them properly.

We can now propose a schematic periodization to describe the effects of brain and mind sciences on analytic philosophy, following some of Williamson's considerations in *The Philosophy of Philosophy*. In particular, we can identify a first phase of the critique of the syntactic interpretation of scientific theories proper of the big old circles, during which the same concepts of observability and observational language (observational parts of sentences) proposed by logical empiricists demonstrated to constitute an oversimplification of both human observation and entities. These critics provoked, among other effects, a general dismissal of behaviorist descriptions and propositional protocols in interpreting mental phenomena - an old tendency still present in Quine and the late works of Wittgenstein.

Given these premises, the breaking novelties represented by Fodor's language of thought, Chomsky's I-language modeling, and the following debate about the possible internal structure of *innate concepts* affected the development of philosophy significantly in the 50s and 60s, partially compromising the primacy role assumed by the *philosophy of language* through the "linguistic turn." A basic tenet shared by the first generations of analytic philosophers was, in conformity to the familiar behaviorist tendencies, that questions about thought, concepts, and knowledge had to be faced basically through the analysis of explicit linguistic expression and not the other way round (P1: *Methodological Principle*)⁴⁸.

It is interesting to note that we can find similar contrapositions also inside the old continental tradition, in particular concerning the philosophical linguistics of De Saussure and Jakobson, with the centrality attributed by those authors to

⁴⁸ This contraposition should be better framed in a more general dialectic, including verificationist theories of propositions. These last imply behaviourist psychology and direct observability, as opposed to emergent cognitivist interpretations, which imply hidden processes. This article could indeed be interpreted as a contribution in this last direction.

impersonal *structures*, in analogy with the same tendency in anthropology⁴⁹. The subdivision of mental contents in concepts on the ground of the representation of the linguistic sign as a *two-sided psychological entity*⁵⁰ corresponding to words (alternatively, the almost complete effacement of the “internal part”) fell under the same critics.

Anyway, from then on, the development of cognitive sciences didn't stop exercising its influence on philosophy, however entertaining with it different kinds of relations characterized by different rhythms, and the rise and diffusion of the connectionist model of *cognition* as a function lacking a sentence-like “internal syntax” gave then probably the *coup de grace* to the original conception of the discipline.

Between 1950 and 2000, the scientific world assisted in several “cognitive revolutions⁵¹,” probably culminating with the constitution of the new areas of *deep learning* and *neural network representations*, which despite the connectionist origin, reached substantial compatibility with the antagonist currents⁵². Surprisingly enough, precisely the latest developments in the cognitive sciences had a low impact on the philosophy of language initially. Still, thanks to the increasing general importance of their achievements, at the end of the first decade of our century, they began to enter the

⁴⁹ It would be interesting to produce an accurate historical reconstruction of the influence of the Bourbaki group on the “French Structuralism” intended as a whole.

⁵⁰ V. Saussure, F. de, (1916), 1956, 1966. Part One: General Principles; Chapter I: Nature of the Linguistic Sign.

⁵¹ See Hittner, Hoogesteijn, Fair, van Regenmortel & Rivas, 2019.

⁵² “Implementationist connectionism is a more ecumenical position. It allows a potentially valuable role for both Turing-style models *and* neural networks, operating harmoniously at different levels of description (Marcus 2001; Smolensky 1988). A Turing-style model is higher-level, whereas a neural network model is lower-level. The neural network illuminates how the brain implements the Turing-style model, just as a description in terms of logic gates illuminates how a personal computer executes a program in a high-level programming language”. Rescorla, M., *The Computational Theory of Mind*, Stanford Encyclopedia Online

area of *philosophy of mind*. This one was already relatively independent from patterns of argumentation typical of the philosophy of language⁵³ and, due to its increasing complexity, tended to split in different directions; so the new trends contributed to the emergence of further local subdivisions such as *philosophy of cognition*, *philosophy of neurosciences*, *philosophy of information*, *philosophy of AI* and many more⁵⁴. It was the end of the primacy of analysis of language as the core of all philosophical activities (in particular as a necessary condition for epistemology) as it was conceived paradigmatically, for example, in Dummett's program, and as it was supposed in some relevant aspects in Quine's scientific naturalism⁵⁵. It is indeed one of the most interesting contemporary cases where the emergence of scientific programs directly influenced some central philosophical principles⁵⁶.

Some authors maintained that a sort of “domain of concepts” extending outside of manifest linguistic expressions

⁵³ In Searle, 1992, we already find a kind of inversion of what we could call the *Dummett's hierarchy*: “Nearly two decades ago I began working on problems in the philosophy of mind. I needed an account of intentionality, both to provide a foundation for my theory of speech acts and to complete the theory. On my view, the philosophy of language is a branch of the philosophy of mind; therefore no theory of language is complete without an account of the relations between mind and language and of how meaning—the derived intentionality of linguistic elements—is grounded in the more biologically basic intrinsic intentionality of the mind/brain”. (Searle, 1992, 5)

⁵⁴ Noichl (2021) states only, on statistical basis, that “philosophy of mind” already split up to the subclusters “philosophy of consciousness” and “general philosophy of mind”; much finer-grained subdivisions are actually possible.

⁵⁵ “Quine treats knowledge as embodied in language. Apart from other considerations, language-use is observable and thus subject to scientific inquiry. Quine's concern with how we might acquire knowledge thus takes the form of a concern with how we might acquire cognitive language”. In Hyton. P., and Kemp, G., *Willard Van Orman Quine*, Stanford Encyclopedia Online.

⁵⁶ At the turn of the century, phenomenology met a very similar chance, finding the same possibility of co-working in the cognitive sciences conditioned by a kind of naturalization (an “anti-aprioristic turn,” so to say), which conveyed the banning of some principles at the core of the phenomenological doctrine. Some authors' resistance was strong, and some secondary “radical phenomenological projects” continue to exist.

could constitute anyway the proper stuff of philosophy (a certain convergence on this point lead to the “conceptual turn”). But it’s a coarse equivocation, as the no-syntax hypothesis already showed, and we can now better underscore based on two facts.

First of all, the progressive overcoming of the “linguistic turn” in front of the impressive growth of cognitivism is definitely the main reason for the numerous critics raised in the second half of the XX century against antipsychologism – a position championed by leading figures such as Frege, Wittgenstein and Dummett. Psychological arguments on the nature of concepts and thought, indeed, were usually blocked, affirming the primary importance of the public and social nature of language. *Not just meaning but concepts and knowledge too, instead, were generally supposed to be somehow “essentially embodied” in a so conceived language* - according to the conventional pragmatical embedding’s more or less relevant determinants (P2, *Ontological Principle*, permitting both Fregean and Wittgensteinian variants). But we can’t consider anymore the linguistic practices as the basic instance for the definition of thought and related concepts (those not trivially dependent on the semantic level from linguistic capacities, such as the same concept of “concept”: animals and babies too dispose of concepts and employ them).

As a second step, while new flexible positions about psychology characterized essential changes in the practices and the theories of logic, some more elusive although more pervasive effects of the cognitive revolutions reached far beyond this specific domain. In this way, they impeded the functioning of antipsychologism as a *de facto* kind of disciplinary margin, permitting the isolation of the mentioned *a priori* knowledge (P3, *Epistemological Principle*), which guaranteed the explicatory independence (or even primacy) of philosophy over empirical sciences in general (something not so different, after all, from the aprioristic positions assumed by the phenomenological reductionists). As seen, philosophy can’t be identified anymore through a particular kind of epistemic access to its supposedly conceptual contents.

Following this argument, some conclusions of Quine's *Epistemology Naturalized* seem at least partially vindicated. Still, it's equally evident that his epistemology disavowed (or possibly was blind to) the impact of the successive cognitive revolutions on the general overcoming of antipsychologism. Quine presented an argument that permitted the old binomial language/knowledge to maintain an essential character (a necessary biconditional relation). I argue that all versions of Quine's idea could be interpreted as a corollary of the more far-reaching phenomena we are trying to describe. The *analytic/synthetic* and the *a priori/a posteriori* distinctions, also if we desire to maintain their validity in some local argumentations⁵⁷, *are no more considered functional to circumscribe the specific domain of philosophical inquiry precisely due to the fall of the primacy (or better: the all-encompassing nature) of philosophy of language*. That means that judgments have always been conceived as *linguistic entities* (however oft implicitly), but the idea of language as essential for thought was fading away.

III. From Cognitive Sciences to Metaphilosophy

I'll try to give a summary idea of how to conceive *thought*, *knowledge*, and *concepts* in the sense of contemporary scientific philosophy and cognitive sciences.

I propose a schematic general ontological conception grounded on *meaning's externalism*; we can define the *conceptual function* of human cognition in the same metaphysically lightweight terms. Concretely, I show and support some elements of continuity between the work of Ned Block on consciousness and propositional content in cognitive sciences and the influential epistemological ground-position already expressed by Tim Williamson in the 90s: the so-called principle of *knowledge first* (i.e., knowledge is not definable in terms of belief, and represents, on the contrary, a primitive and general mental state; one of the advantages

⁵⁷ For example, in relation to Chomsky's projects, maybe adopting a heuristic motivation; or maybe considering the general acceptance of the *implicit definitions* of Boghossian, Wright and Hale.

of this position is the neutralization of radical skeptical scenarios such as “brains in a vat”; another one is the independence of knowledge from assertion and explicit judgment).

Following Block, we can first recognize two different *modes of presentation* of entities:

I will distinguish between the cognitive mode of presentation (CMoP) and the metaphysical mode of presentation (MMoP). The CMoP is the Fregean mode of presentation [...], a constellation of mental (cognitive or experiential) or semantic features of a term or mental representation that plays a role in determining its reference, or, alternatively but not equivalently, constitutes the basis of explanation of how true identities can be informative. [...] The importantly different, non-Fregean, and less familiar mode of presentation, the MMoP, is a property of the referent. There are different notions of MMoP corresponding to different notions of CMoP. Thus if the defining feature of the CMoP is taken to be its role in determining reference, then the MMoP is the property of the referent in virtue of which the CMoP plays this role in determining reference. If the defining feature of the CMoP is taken to be explaining cognitive significance, then the MMoP is the property of the referent in virtue of which cognitive significance is to be explained⁵⁸.

A CMoP can constitute, under some conditions, a concept. This remark reveals particularly illuminating in the case of the referent being itself a mental entity: free from Fregean restrictions in our reference to concepts, we can individuate second-degree CMoPs as presentations, or even concepts, of concepts.

Reflexive subjectivity and reflexive subjective experiencing could be consequently understood as *cognitive presentations (or even concepts) of concepts*, i.e., (potentially general) ways of experiencing in first person (2nd-degree CMoP) our general perception and comprehension in first person (CMoP as a concept) of ourselves or our experienced objects. We should distinguish them sharply from A. Bird’s definition of Natural Kinds as *properties of properties*, i.e., fundamental metaphysical entities. In this way, talking about the differences between subjective (first-person) and objective (third-

⁵⁸ See Block, 2007, 446-447.

person) modes of presentation of *consciousness*, we are just referring to different cognitive features of two different ways of access to consciousness. Suppose it is obvious that we are conscious of being conscious most of the time. In that case, this does not mean that this first-person experiential feature of our apprehension of consciousness makes it directly accessible to us. In the same way, the concept we form from this experience does not assure its clear comprehension; it would be a false deduction, leading to apriorism.

In this sense, we postulate a metaphysical reality to recognize better and identify our limits. Block's definitions, which prove largely adequate to classify and explain empirical results, find a surprising consonance in Williamson's general epistemological principle. So I argue that *we should first interpret our cognitive limits in terms of the epistemic access to true propositions that they permit.*

[...] A proposition requires a margin for error precisely so that it can be known; the point of the anti-luminosity argument is just that the cases in which p is available to be known do not exhaust the cases in which p is true.

[...] On an anti-realist picture, thought initially engages with conditions whose esse is their percipi; if it later finds its laborious way to conditions of greater depth, it must do so from the starting point of that cognitive home. Assertibility-conditions are pictured as forming a cognitive home in language. They do not. Thought engages with conditions whose esse is distinct from their percipi as soon as it engages with any conditions at all; even perception does. Trivialities aside, there is nothing else to engage with. We have no cognitive home.

[...] The reference of 'the fact that A' in the definite description is presumably determined by the proposition p expressed by 'A'; it is therefore some function f of p. Thus to know that A is to know the f(p), and hence to stand in a complex relation expressed by 'know', 'the', and 'f' to the proposition expressed by A. But then with only a slight change of meaning we could use the word 'know' for that complex relation to a proposition⁵⁹.

⁵⁹ Williamson, 2002, 19, 113, 43.

In some fundamental cases, this “complex relation” can be interpreted as the polarization between MMoP and CMoP expressed by Ned Block. This also means that possible linguistic expressions of knowledge, depending on the modes of presentation, are derivable from knowledge-as-a-state-of-mind, while the other way round is not true (p-propositions are not Russellian structured ones, similar to “the shadow of sentences”). We can now introduce a possible relation, which we could call Δ , involving the true proposition p. We can then define a (partly) *generalizable cognitive access* $S\Delta p$, where S is a mental state: $S\Delta p$ is the *conceptualization (CMoP) of p that a subject can form if she, being in S, knows p through general cognitive patterns, based on her cognitive limits Δ* . It is important to notice that: 1) our concepts can be empty of falsely applied, leading to no knowledge at all (the def.-sentence contains no biconditional); 2) we can accept that knowledge is non-luminous but equally maintain that concepts normally are (it is important to distinguish concepts from general access relations, which can be unconscious and internally unstructured, difficult to differentiate from contextual *tokens*): not every state of knowledge leads to the formation of a concept - this is indeed modally expressed as an open possibility; 3) concepts are independent of linguistic expressions; 4) every truly applied concept is the expression of the cognitive limits relative to a particular mental state of knowledge (a specific *type*, not a *token*).

Following these principles, our further definitions must be the most lightweight as possible, in the sense that they should guide and orient our research to the highest available objectivity without limiting them apodictically. The limits come necessarily by themselves through the conceptualization of the object that we perform: the object (the *fact*, at any level) can be known only under the necessary conditions Δ .

Simulations of concepts’ production and evolution obtained through their representation in conceptual spaces are an interesting way to combine philosophy, AI, psychology, and linguistics in a quite innovative and informative way. Projects of research on human cognition using this kind of representation could find in the

simple conceptual environment that I propose a hopefully helpful foundation⁶⁰.

We can close the paragraph by reaffirming that our default semantics (on a heuristic basis, the best semantical representation we have today) indicate that we use our words in an essentially referential way. There isn't, and there couldn't be a transcendental demonstration of the correctness of this surface suggestion; but a consistent metaphysic is now clearly justified meta-metaphysically (through meta-ontological reflections, deriving from scientific necessities). CS needs and justifies a philosophical foundation in metaphysical terms, while the latter guides the former in terms of interaction between different domains of entities⁶¹. In this frame, descriptive and normative elements show clearly their complementarily – in particular, if we assume as valid the Thagardian conception of normative statements as grounded on the limitation of human knowledge. We can leave the in depth-study of this theme for another paper.

IV. Resuming

Analytic philosophy no longer shows core principles; maybe it simply ceased to exist. The previous margins of philosophy appear broken: linguistics, psychology, pragmatics, neurology, ethology, and empirical research in general progressively contaminate the “domain of pure reason”. It is not true that while other sciences study empirical questions, we explain or clarify *conceptual* ones in a

⁶⁰ I discuss this topic too in the forthcoming article: Boccafogli, 2022, already quoted in note 30.

⁶¹ This relation between metaphysics and cognitive sciences can be treated as an argument *against* metaphysical foundations. See Kästner, 2017, 599-600: “In order to relate different experiments to one another and integrate the evidence they provide into a coherent overall picture, we must think about how various domains, or levels, of investigation relate. While I take this to be primarily matter for empirical scientists to figure out rather than a question for metaphysicians, the topic clearly has philosophical significance. For if we talk about interlevel mutual manipulability we must know how to decide whether things are at the same level or not.”

state of relative (epistemological, metaphysical) independence: the link language-knowledge doesn't draw a threshold secure enough to guarantee a sufficiently specific domain of our topics.

From another (more internal) perspective, philosophy generally shows a growing tendency toward *scientificity*. State of the art about specific philosophical methods and results regarding their relevance and role on an interdisciplinary level is far from trivial nowadays.

The same historical reconstruction that I propose through this article implies a program of partial unification, possibly including all the aspects linking philosophical research to cognition and concepts. Different thematics can be related, maintaining the leading principle of epistemic-access specificity and the polarization of metaphysical and conceptual levels. It seems to be an emergent topic despite the long history of the philosophy of concepts, in particular because thematizing general limits of knowledge permits to individuate a complementarity between prescriptive methods and descriptive stances in metaphilosophy.

We can conclude that 21st-century philosophy finds one of its most important tasks in answering the metaphilosophical question about the centrality that the *cognitive definition of concepts* (as opposed to the previous *a priori* definition of conceptual analysis) is supposed to play for its disciplinary definition. On the one hand, we find the possibility of maintaining a quasi-classic definition of philosophy as a discipline whose domain of objects remains essentially conceptual, but without intending this *nature* in a primarily linguistic nor, even worst, aprioristic sense. The link with cognitive sciences would become, in this case, an *essential* one (maybe philosophy has changed its most sacred finality, substituting the holy grail of a *theory of cognition* for the one of a *theory of meaning*⁶²). On the other hand, a possible redefinition of philosophy as a discipline ranging in various arguments, inclusive of conceptual matters, but not at all limited to those, reveals quite influential today. The actual interest for concepts could be just a historical

⁶² See Naor, Ben-Ze'ev, and Okon-Singer, 2014.

tendency, as already mentioned in relation to the upper-level branches of epistemology and methodology. Identifying distinctive disciplinary core contents would be a harder task in this case, requiring strong commitments to the renewed centrality of metaphysics.

New possible projects could proceed in the direction of synthesizing the two tendencies. A significant basis of data can and should be used; computational methods are explicitly included from the beginning. Many mathematical tools could and should be employed, maybe Category Theory in the first line⁶³.

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⁶³ Boccafogli, 2022, forthcoming.

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