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KARL POPPER AND CONTEMPORARY ARGUMENTATION THEORY: THE CASE OF PRAGMA-DIALECTICS

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Abstract: Virtually for the first time in the known historiography on the present impact of Karl Popper's philosophy upon the theory of rhetoric and argumentation, this impact is scrupulously analysed and its most important dimensions are highlighted. The author shows how the above impact is crucial to understanding some contemporary schools within the scope of that theory, such as pragma-dialectics. The limitations of Popper's philosophy are carefully analysed while, on the other hand, the limitations of the theory of rhetoric and argumentation itself are thoroughly discussed, in order to properly appreciate the contribution in question. Globally, it is concluded that Popper's influence is inescapable.

Keywords: argumentation; Popper; pragma-dialectics; rhetoric.

Resumo: Praticamente pela primeira vez na historiografia conhecida sobre o impacto, hoje em dia, da filosofia de Karl Popper na teoria da retórica e da argumentação, o autor analisa escrupulosamente um tal impacto, salientando as suas vertentes mais importantes. Mostra-se que o mesmo é decisivo para podermos compreender algumas escolas contemporâneas, no âmbito dessa teoria, como é o caso da pragmadialética. As limitações do contributo de Popper, são cuidadosamente analisadas, mas, por outro lado, as limitações da própria

Résumé: Pratiquement pour la première fois dans l'historiographie connue qui s'occupe de l'impact actuel de la philosophie de Karl Popper sur la théorie de la rhétorique et de l'argumentation, l'auteur analyse scrupuleusement un tel impact, en mettant en évidence ses dimensions les plus importantes. Il démontre que cet impact est indispensable à la compréhension de certaines écoles contemporaines au sein de cette théorie, comme la pragma-dialectique. Les limites de la contribution de Popper sont soigneusement analysées, mais, d'autre

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teoria da retórica e da argumentação, por forma a assimilar devidamente o contributo em causa, são atentamente discutidas. Conclui-se, no conjunto, que a influência de Popper é incontornável.

Palavras-chave: argumentação; Popper; pragmadialética; retórica.

part, l'auteur discute également de manière approfondie les limites de la théorie de la rhétorique et de l'argumentation elle-même, afin d'apprécier correctement la contribution en question. Dans l'ensemble, il ressort que l'influence de Popper est incontournable.

Mots-clés: argumentation; Popper; pragma-dialectique; rhétorique.

> In short, the rationalist attitude, or, as I may perhaps label it, the 'attitude of reasonableness', is very similar to the scientific attitude, to the belief that in the search for truth we need co-operation, and that, with the help of argument, we can attain something like objectivity.
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> K. Popper, *The Open Society and Its Enemies*.

> In the 1970s, van Eemeren and Grootendorst, inspired by Karl Popper's critical rationalism, began to study argumentation as a means of resolving differences of opinion.
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> van Eemeren *et al*., *Fundamentals of Argumentation Theory*.

1. Introduction

Karl Popper is one of the most brilliant philosophers of the 20th century. His influence on philosophy in general and on the philosophy of science in particular is well known. But, in contrast to others like Toulmin or Perelman, the full extent and comprehension of Popper's influence on rhetoric and argumentation theory during this period has yet to be studied and analysed. This subject has been episodically addressed by some schools such as pragma-dialectics. I say "episodically" because — as far as we know — it has never in fact been evaluated as deeply and as meticulously as should be expected. The aim of this article is precisely to fill that gap.

Presumably, the absence of studies and research can be explained as follows: we know that Popper wrote a great deal about argumentation, this being indeed one of the main components of what he called "critical rationalism", but the fact is that he did not come to present and develop a theory of argumentation *per se* (for example, and in this case, its rules and their respective conceptualisation for debate and dialectical refutation, either in science or outside it), much less a theory of argument, that is, a theory about what constitutes it (assumptions, their interconnections, how they relate to

the conclusion or conclusions, a diagrammatical representation of this relationship, etc.).

The above statement is often misinterpreted by some of Popper's followers today. For example, Suárez-Iñiguez discusses the "power of argumentation" for the great philosopher, but the fact is that there is not a single paragraph in his book that shows how Popper conceived of argumentation either within or without science.[2] More controversially, other British and North American authors discuss "Popper's debate rules", but the truth is that nowhere are we told in which of his texts are such rules laid down.[3] (The indisputable importance of argumentation for Popper, both in science and in society, does not necessarily presuppose or imply that he did propound a more or less specialised theory on the subject, that is, on argumentation *per se*, such as those advanced by Toulmin and Perelman in 1958 in their respective books, *The Uses of Argument* and *Traité de l'argumentation*,[4] or the theory which, to some degree, may be later found in Habermas; inarguably, that was never the case with the author of *The Logic of Scientific Discovery*). This means that Popper's influence on contemporary argumentation theory does not — in principle — include such a theory. When I say his influence, I do not mean a direct, *unmediated* impact of Popper's conceptions, which — to the best of my knowledge — did not occur, although a number of texts by contemporary argumentation theorists seem to controversially suggest the opposite. For example, in *Fundamentals of Argumentation Theory*, the authors ambiguously state, in a passage I again quote, that: "In the 1970s, van Eemeren and Grootendorst, *inspired by Karl Popper's critical rationalism*, began to study argumentation as a means of resolving differences of opinion."[5]

The rhetorical expression "inspired by" is controversial since it may suggest that Popper's critical rationalism providentially appeared "out of thin air", ready-made for the benefit of the founders of the dialectical schools. If one reads, for example, *A Systematic Theory of Argumentation*, by van

[2] E. Suárez-Iñiguez (ed.), *The Power of Argumentation* (Amsterdam/N. York: Rodopi, 2007).

[3] See http://debatovani.cz/files/dokumenty/120923_kp-debate-rules.pdf (last accessed: December 2020).

[4] See S. E. Toulmin, *The Uses of Argument* (Cambridge: Cambridge University Press, 1958); and Ch. Perelman & L. Olbrechts-Tyteca, *The New Rhetoric: A Treatise on Argumentation*, transl. J. Wilkinson & P. Weaver (Notre Dame: University of Notre Dame Press, 1969).

[5] F. H. van Eemeren *et al*., *Fundamentals of Argumentation Theory. A Handbook of Historical Backgrounds and Contemporary Developments* (Mahwah, NJ: Lawrence Erlbaum Associates, Publishers. 1996), 274, my emphasis.

Eemeren & Grootendorst,[6] and one has the opportunity to observe the wide variety of themes and influences, both direct and indirect, in pragma-dialectics, ranging from linguistics to philosophy and including such diverse conceptions as Toulmin's theory of argumentation in some of his texts,[7] or Searle's "speech act" theory,[8] besides Popper, obviously,[9] one cannot subscribe to the direct, unmediated impact interpretation. In other words, and in my understanding, this is not a matter of simple adaptation or application of Popper's theories by the major theory of argumentation schools (the dialectical, such as the pragma-dialectical and the formal dialectical, and the others, such as the so-called "informal logic" school) in their respective fields; it is not a matter of having read the great philosopher in order to develop some conceptions from the point of view of the theory of argumentation. However, this does not mean that, in regard to a number of important aspects, it is impossible for us to eventually be able to establish a parallel, or even a more or less essential connection between Popper's conceptions and those of the schools mentioned, particularly the dialectical. On the contrary, what seems to have happened is that such schools *have identified in Popper's conceptions on science and society (conventionally called "critical rationalism") a brilliant confirmation of their own intuitions regarding argumentation.* Both sets of conceptions are situated in time, being products of the same era historically and philosophically, i.e., the second half of the 20th century; the opposite, meaning the absence of such a parallel or connection, would indeed be surprising.

This is my plan for this article:

(1) first, to analyse Popper's model of science in Popper's *The Logic of Scientific Discovery* and other works written immediately after, and to suggest their implications for contemporary argumentation theory; [10]

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[6] F. H. van Eemeren & R. Grootendorst, *A Systematic Theory of Argumentation: The Pragma-dialectical Approach* (Cambridge: Cambridge University Press, 2004).

[7] S. E. Toulmin*, Knowing & Acting: An Invitation to Philosophy* (New York: MacMillan Publishing Co., Inc.; London: Collier Macmillan Publishers, 1976).

[8] See J. R. Searle, *Speech Acts: An Essay in the Philosophy of Language* (Cambridge: Cambridge University Press, 1969); and J. R. Searle, *Expression and Meaning: Studies in the Theory of Speech Acts* (Cambridge: Cambridge University Press, 1979).

[9] See K. R. Popper, *The Open Society and Its Enemies. Vol. I: The Spell of Plato. Vol. II: The High Tide of Prophecy: Hegel, Marx, and the Aftermath* (London: George Routledge & Sons, Ltd., 1945); K. R. Popper, *The Logic of Scientific Discovery*, 7th impression (London: Hutchinson of London, 1974); and K. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* (London: Routledge and Kegan Paul, 1989).

[10] A study of those implications, in historical terms, will be carried out here to the beginning of the 21st century, mostly. In the case of pragma-dialectics and generally, it will extend to such works as F. H. van Eemeren & R. Grootendorst, *A Systematic*, and F. H.

(2) then, to seek to analyse and discuss each of those implications in detail within what could tentatively and hesitantly be termed "Popper's theory of argumentation";
(3) and lastly, to show not only the originality but also, and mostly, the limits and challenges presented by that theory in the more general and current context of the originality, the limits, and the challenges of contemporary argumentation theory itself.

2. Popper's argumentative model of science

Popper's conception of argumentation includes his philosophy of science in Popper's *The Logic of Scientific Discovery* – a book first published in German, with the title *Logik der Forschung*, in 1935. (It was his third book in English, in 1959, after *The Open Society and its Enemies* and *The Poverty of Historicism*.)[11] In *The Logic of Scientific Discovery*, the essential connection between science and argumentation entailed a rejection of the demarcation criterion separating science from metaphysics as introduced by logical positivism at the time, i.e., the idea that, in contrast to philosophical and/or metaphysical theories (hypotheses), scientific theories (that is, in the physical-natural sciences and, by the same token, in mathematics itself), can be empirically verified and/or fully corroborated. For Popper, on the contrary, the legitimacy of this criterion is based on the following: a theory and/or hypothesis is *non-scientific* or *metaphysical* if it cannot be conclusively refuted or falsified; on the other hand, it is *scientific* if it eventually comes to be successfully rejected or falsified. This criterion has given rise to many discussions and controversies within the philosophy of science, but they are not of special relevance to the present discussion.[12] Its relation with argumentation and critical thinking, from a dialectical perspective, is obvious: what happens when we argue is precisely that we seek to falsify or to refute a thesis or a claim that is submitted to discussion. From this standpoint, the basic logical model of Popper's critical rationalism is *modus tollens* rather than

van Eemeren (2010), *Strategic Maneuvering in Argumentative Discourse: Extending the Pragma-dialectical Theory of Argumentation* (Amsterdam/Philadelphia: John Benjamins Publishing Company, 2010).

[11] See K. R. Popper, *The Poverty of Historicism* (London: Routledge & Kegan Paul, 1957).

[12] See J. Shearmur & G. Stokes (ed.), *The Cambridge Companion to Popper* (Cambridge: Cambridge University Press, 2016); and P. A. Schilpp (ed.), *The Philosophy of Karl Popper*, vol. XIV of the Library of Living Philosophers (Evanston, Illinois: Open Court Publishing Co., 1977).

logical positivism's *modus ponens*: denying, refuting the implications or the consequences of a theory and/or a hypothesis (its consequent), so as to deny/refute its presuppositions (its antecedent). There exists argumentation only when there is disagreement or a dispute, otherwise argumentation will not even occur; from the point of view of dialectical schools, this means that there must be at least a "protagonist" or a "proponent" of a given thesis or claim, and, on the other hand, an "opponent". This disagreement does not mean an eventual, more of less complete refutation/corroboration of the thesis in question; the possibility of it being relevant and of eventually coming to be accepted, even if only in part, must be considered.[13] And Popper's theory of probability (particularly after the English edition of *Logik der Forschung*) is in full agreement with that: the falsification perspective is what can afford a greater or smaller degree of confirmation or corroboration of a hypothesis by a given scientific community – not the opposite. If such falsification does not occur, then no corroboration occurs, and the hypothesis in question will simply be non-scientific. The criterion of falsifiability is, therefore, essentially dialectical. It does not set absolute epistemological distinctions or demarcations between falsification and corroboration or between science and metaphysics, as is sometimes claimed; the reason is that it is not based on an irreducible opposition between "true" and "false" and their semantic corollaries. It might be said that, in contrast to the positivistic criterion, the criterion of falsifiability aims at what Perelman and Toulmin call the "reasonable" rather than the "rational",[14] that is, it leaves open the possibility of a given theory or hypothesis eventually being falsified/corroborated. As will

[13] In F. H. van Eemeren & R. Grootendorst's *A Systematic*, the terms "proponent" and "opponent" are used in discussing the "rules for critical discussion". This is E. M. Barth & E. C. Krabbe's terminology in *From Action to Dialogue: A Philosophical Study of Logics and Argumentation* (Berlin/New York: Walter de Gruyer, 1982). However, particularly in the study of the "confrontation" stage of this discussion model, the expression used is mostly "difference of opinion", which may be either explicit or implicit: "In the confrontation stage of a critical discussion, it becomes clear that there is a standpoint that is not accepted because it runs up against doubt or contradiction, thereby establishing a ('non-mixed' or 'mixed') difference of opinion. The difference of opinion can also pertain to more than one standpoint (and is then to be characterized as 'multiple')". This is followed by a specification: "The difference of opinion can be expressed explicitly, but in practice it may well remain implicit. In the latter case, it is either assumed in the argumentative exchange of views that a difference of opinion exists or the possibility of a difference of opinion is anticipated. Without such a real or presumed confrontation, there is no need for a critical discussion." (p. 60)

[14] See Ch. Perelman, *The New Rhetoric and the Humanities: Essays on Rhetoric and its Applications* (Dordrecht: Kluwer Academic Publishers, 1979); and S. E. Toulmin, "Razoabilidade e racionalidade", in: M. M. Carrilho (ed.), *Retórica e comunicação* (Lisboa: Ed. Asa, 1994), 19-30.

be suggested below, this has major ethical consequences (which are often ignored or underestimated) on both Popper's rationalism and the rationalism of the dialectical schools of argumentation.

What has been said about the connection between Popper, on the one hand, and Perelman and Toulmin, on the other, regarding the concept of "reasonableness" is, to some extent, a response to Toulmins's interpretation of Popper in *Human Understanding*.[15] Toulmin objects that (1) like the positivist criterion, Popper's criterion is logical and *a priori*, and that (2) the issue of the demarcation between science and metaphysics no longer makes sense (as he himself demonstrated in his work on "apparent invariants of thought and language" [chapter 7]), leading to radical conceptions such as Feyerabend's *Farewell to Reason*,[16] which are equally unacceptable. (In *Knowing and Acting* he is more understanding towards Popper, viewing his approach of science as a way "to recognize the unique 'rationality' of modern science, and to analyse the general principles that ensure its particular success.").[17] The response to Toulmin's objections had been for the most part anticipated by Popper himself in 1957 when he claimed that, contrary to the positivistic criterion, his was not a criterion of meaning.[18]

A crucial point concerning the application of the criterion of falsifiability, which will later find its counterpart in those schools (particularly the pragma-dialectical), is that it requires that the whole edifice of Physics as known at the time be completely reconstructed according to the principle that "every 'good' scientific theory is a prohibition: it forbids certain things to happen. The more a theory forbids, the better it is."[19] If a scientific theory or hypothesis, regardless of whether it has been presented and established or not, does not abide by this principle, it should be reconstructed in accordance to it and its methodological application rules, which, as the philosopher claims, are essentially negative or prohibitive. Popper exemplifies: "Once a hypothesis has been proposed and tested, and has proved its mettle, *it may not be allowed to drop out without 'good reason'.* A 'good reason' may be, for instance: replacement of the hypothesis by another which is better testable, or the falsification of one of the consequences of the hypothesis."[20] Such rules are necessary, namely, to determine the way how the falsification/corroboration of said hypothesis is effected. If such reconstruction cannot

[15] See S. E. Toulmin, *Human Understanding: The Collective Use and Evolution of Concepts* (Princeton, New Jersey: Princeton University Press, 1977), 479-483.

[16] See P. Feyerabend, *Farewell to Reason* (London: Verso/New Left Books, 1987).

[17] Toulmin, *Knowing*, 216-217.

[18] See Popper, *Conjectures*, 33-65.

[19] Popper, *Conjectures*, 36.

[20] Popper, *The Logic*, 32, my emphasis.

be made, the hypothesis in question is not scientific. The application of the falsifiability criterion mentioned above entails exactly this reconstruction. In Popper's epistemology, principle and rules are constitutive of what we may call a "scientific method", which, from a perspective such as his, is only *implicit* in all genuine contemporary scientific practice, which largely explains its confusing, or perhaps even chaotic, state at the time of Popper's first publications.[21] (The role they play is similar to that of the Principle of Communication and the rules for critical discussion in the pragma-dialectical model for this discussion, in *A Systematic Theory of Argumentation*). "Implicit" here means that, in one way or another, they have always underlain scientific research and the progress of science; and that the role of Popper's epistemology (like, by analogy, the role of pragma-dialectics with its argumentation model) is to make them explicit or to make scientists (or argumentation generally) aware of them. The non-scientific or metaphysical character of the theories or hypotheses that cannot be falsified ultimately stems from the violation of such abovementioned rules (in the same way as, for pragma-dialectics, in the abovementioned book, fallacies in argumentation result from a violation of the rules of the critical discussion model).[22] In the German edition of *The Logic of Scientific Discovery* (1935), Popper does not conceive of this model in social, cultural, or political terms, although he strongly suggests that it can, and should, be done. This conception will only emerge in Popper's *The Open Society* (1945), *The Poverty of Historicism* (1957), and in a number of articles collected in *Conjectures and Refutations* (1963). This is how "critical rationalism" is defined in Popper:

> (...) In order therefore to be a little more precise, it may be better to explain rationalism in terms of practical attitudes of behaviour. We could then say

[21] In *The Logic*, Popper, does not speak of a "scientific method" but rather of a "theory of experience". Presumably, his allegation, in Kantian terms – which he generally subscribes to – would be that, since epistemology cannot produce its own scientific experiment, this experiment can only be described through an analogy, "regulatorily", that is, "as if" the experiment described did constitute that experience. (See I. Kant, *Critique of Pure Reason*, transl. & ed. by P. Guyer & A. Wood [Cambridge: Cambridge University Press, 1998].) I have analysed the connections between Popper's epistemology and Kant and Kantism in a number of publications, such as: H. J. Ribeiro, "Karl Popper: A epistemologia como 'terra de ninguém' ou da tarefa de re-construção da ciência (a resolução experimental do trilema de Fries)", *Revista Portuguesa de Filosofia*, 42 (1986), 87-118; H. J. Ribeiro,"Karl Popper: A epistemologia como 'terra de ninguém' ou da tarefa de re-construção da ciência (a resolução experimental do trilema de Fries)", *Revista Portuguesa de Filosofia*, 43 (1987), 71-108; and H. J. Ribeiro, "Kant e a filosofia analítica contemporânea", *Revista Filosófica de Coimbra*, 57 (2020), 59-88.

[22] See van Eemeren & Grootendorst, *A Systematic*, 158-196.

> that rationalism is an attitude of readiness to listen to critical arguments and to learn from experience. It is fundamentally an attitude of admitting that *'I may be wrong and you may be right, and by an effort, we may get near to the truth'*. It is an attitude which does not lightly give up hope that by such means as argument and careful argumentation, people my reach some kind of agreement on most problems of importance. In short, the rationalist attitude, or, as I may perhaps label it, the 'attitude of reasonableness', is very similar to the scientific attitude, to the belief that in the search for truth we need co-operation, and that, with the help of argument, we can attain something like objectivity.[23]

A few years later, in "Towards a rational theory of tradition" (1949), Popper applies this conception of critical rationalism to the idea of tradition, anticipating from his own point of view such themes as Kuhn's in *The Structure of Scientific Revolutions*.[24] In his text, Popper starts from K. Bühler's theory of language functions and adds a new one: "the argumentative or explanatory function", according to which traditions can generally be conceived of as instruments "against that misuse of language which consists in pseudo-arguments and propaganda, that is, the tradition and discipline of clear speaking and clear thinking." According to him, "it is the critical tradition ─ the tradition of reason."[25] The topic of language functions, notably those of argumentative language, is resumed in an article titled "Language and the body-mind problem", first published in 1953.[26] However, the connection drawn between critical rationalism in general and rationalism in one's "scientific attitude" was already implicit in Popper's *The Logic of Scientific Discovery*. In order to fully understand this book today one needs to contextualize it in its original time and place: Viennese society and culture from the late 19th century to at least the first quarter of the 20th century.[27] It should be noted that in *Wittgenstein's Vienna*, Toulmin & Janik claim that this is exactly the context in which Wittgenstein's philosophy emerged, with *Tractatus Logico-Philosophicus*.[28] This topic cannot be developed here.[29]

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[23] Popper, *The Open Society*, vol. II, 212-213.

[24] See T. S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: Chicago University Press, 1962).

[25] Popper, *Conjectures*, 135.

[26] See Popper, *Conjectures*, 293-303.

[27] See M. Hacohen's excellent article: "The Young Popper, 1902-1937: History, Politics, and Philosophy in Interwar Vienna", in: *The Cambridge Companion to Popper*, ed. J. Shearmur & G. Stokes (Cambridge: Cambridge University Press, 2016), 30-68.

[28] See S. E. Toulmin, & A. Janik, *Wittgenstein's Vienna* (New York: Simon and Schuster, 1974); C. E. Schorske, *Fin-de-siècle Vienna: Politics and Culture* (New York: Alfred A. Knopf, 1980); and L. Wittgenstein, *Tractatus Logico-Philosophicus with an Introduction by Bertrand Russell* (London: Kegan Paul, 1933).

[29] See H. J. Ribeiro, *Retórica, argumentação e filosofia: Estudos sistemáticos e*

There certainly exists a close connection between Popper's falsificationism, in *The Logic of Scientific Discovery*, and the rejection of the legitimacy of the political and ideological systems operating in Austria until the publication of Wittgenstein's *Tractatus*. While, according to Toulmin & Janik's interpretation, Viennese Wittgenstein placed a particular emphasis on the theory of meaning (that which can ultimately be *said or left unsaid* in a society like ours when culturally and politically interpreted from a philosophical standpoint), for Popper the challenge was not substantially different; what it was about was exactly, in accordance with the falsifiability criterion, demarcating the limits of this theory from the point of view of science (physico-mathematical sciences) in particular, *suggesting* (contrary to Wittgenstein) that meaning exists only through argumentation. In both cases, albeit for different reasons, the challenge in question did not lead them to approach the fundamental role of rhetoric and argumentation as a more or less specialized field of research: this is exactly where the novelty and originality of Toulmin's *The Uses of Argument* lie.[30]

Now, as I mentioned above and wish to emphasize now, the consequences of the new demarcation criterion for the philosophy of science were profound and revolutionary: what Popper was proposing in 1935 (in Popper's German edition of *The Logic of Scientific Discovery*), starting from the presupposition, as I said, that, in their investigations, past scientists had always more or less consciously followed the criterion of falsifiability (which is far from being clear or self-evident), was that the science of the time (that is, classical mechanics, thermodynamics, quantum physics, and the theory of relativity) should be thoroughly reconstructed, from bottom to top, in line with that criterion and its methodological rules of application; in other words, it was necessary to completely reformulate the existing scientific theory and practice, construing all that resulted from a violation of that criterion and those rules as non-scientific or metaphysical (or what the dialectical schools, from the perspective of our analogy between science and argumentation, would later consider "fallacious"). By analogy, and as regards the theory of argumentation, or, more exactly, the violation of the rules of the ideal critical discussion model, the authors of *A Systematic Theory of Argumentation* explain:

> The pragma-dialectical ideal model also indicates which rules apply to the distribution of speech acts in the different stages of a critical discussion. Each rule is necessary because every violation of any of the rules is a po-

histórico-filosóficos (Coimbra: MinervaCoimbra, 2016), 127-151.

30 See S. E. Toulmin, *The Uses of Argument* (Cambridge: Cambridge University Press, 1958); and Ribeiro, *Retórica*, 127-151.

> tential threat to the resolution of the difference of opinion, even though there may be considerable differences from one case to another in the degree of seriousness of the violation. All violations of the rules in critical discussion are incorrect discussions moves that roughly correspond to the argumentative flows traditionally known as fallacies.[31]

This is no doubt a surprising and utterly original conception (even today) of Popper's conceptions in *The Logic of Scientific Discovery*: we need to reconstruct the whole "edifice" of science in line with procedures that remain implicit in its theory and practice. As the author states quite straightforwardly: "What is to be called 'science' and what is to be called 'scientist' must always remain a matter of convention."[32] This is the assumption upon which Popper's conventionalism and normative approach, which are comparable to those of pragma-dialectics, are based: for pragma-dialectics, the argumentative discourse of daily life with all its ambiguities, imperfections and misunderstandings is similarly regulated by the "model of critical discussion" rules as described in *A Systematic Theory of Argumentation*; any analysis and assessment of this discourse should be based on its reconstruction in compliance with those rules.[33] In this book, the model is often described as "ideal", which, from the historical-philosophical perspective that I have been developing and as the pragma-dialectics school has indeed recognized in recent years, can be misunderstood or misinterpreted. This model is not "ideal" insofar as its rules are not "ideal", and therefore, they are not something that *should* simply be applied. They primarily underlie argumentation in daily life. We already apply them, even though we may be unaware of it).[34] Again: the Austrian philosopher believes that the true scientific method consists of a set of conventions or basic norms to be adopted by the scientific community or communities based on the criterion of falsifiability, that is, in fundamentally negative and/or prohibitive conventions or norms. It is not about logical conventions, as in positivism in Popper's time, but rather — because for him science is, ultimately and in light of that principle, a social, cultural, and political phenomenon — about epistemological conventions that are hugely

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[31] van Eemeren & Grootendorst, *A Systematic*, 22. On the problem of fallacies in pragma-dialectics, see F. H. van Eemeren, B. Garssen, & B. Meuffels, *Fallacies and Judgments of Reasonableness: Empirical Research Concerning the Pragma-dialectical Discussion Rules* (Dordrecht: Springer, 2008).

[32] Popper, *The Logic*, 52.

[33] See van Eemeren & Grootendorst, *A Systematic*, chapters 5 and 6.

[34] In van Eemeren, *Strategic*, the word "ideal" is occasionally used in connection with "critical discussion" ("ideal of critical discussion") (see p. 4), but the emphasis on the description of the model itself as "ideal" (as in van Eemeren & Grootendorst, *A Systematic*), seems to have disappeared.

significant from those points of view. On the other hand, although such conventions are formally set and agreed upon among scientists, they — as was explained above — essentially or substantially underlie (and have always underlain) current scientific theory and practice. As I said, all this entailed reconstructing the whole scientific theory and practice of the time along the lines of falsificationist conventionalism. (In his autobiography, Popper insists in the calamitous state of theoretical physics in the 1930s, especially quantic mechanics, observing that there was probably not a single scientist in the whole world at the time who understood the changes that were occurring in that domain, including Niels Bohr himself.[35] Unfortunately, in the abovementioned book, Popper does not provide many examples of what he calls "methodological rules" and he fails to explain the way in which science can be reconstructed according to the criterion of falsifiability.[36] (This only corroborates our reading, i.e., the idea that he was never interested in developing a theory of argumentation *per se*).

Let us call the argumentation model that I have just outlined and described "Popper's argumentative model on science". Surely, for the reasons expounded when discussing the connections between this model and logical positivism, this is not a "logical model", that is, a model of formal logic (the paradigmatic conception of logic up to the 1960s), according to the meaning that was given to it from the perspective of rhetoric and argumentation by both Perelman and Toulmin, particularly by the latter in such works as Toulmin's *The Uses of Argument* and Toulmin's *Knowing & Acting*, cited above. What characterises logic from that point of view is essentially the notion of formal validity: the validity of an argument (as is the case of the transformation rules of propositional logic themselves) is based on syntactical reasons, internal to the argument itself, *which do not depend on the context* (or the "experience") *in which the argument is presented*. Toulmin later argues that such an argument is "analytic", non-substantial, or "geometrical". However, according to Popper's argumentative model, the meaning of any argument formulated according to the falsifiability criterion *essentially requires a context or an experience insofar as it can only be falsified/corroborated within this experience.* Furthermore, Popper's argument is *dialectical* (it can only be evaluated through its contestation or refutation);[37] to a certain

[35] See K. Popper*, Unended Quest: An Intellectual Autobiography* (London and New York: Routledge, 2002), 104-105.

[36] On this, see Popper, *The Logic*, 27 *ff*. On methodological rules, see R. J. Ackermann, *The Philosophy of Karl Popper* (Amherst: University of Massachusetts Press, 1976); and Ribeiro, "A epistemologia" (1986, 1987).

[37] This is a minimal or basic meaning of the term/concept "dialectic" which is in accordance with its later use by dialectical schools of argumentation. Popper discusses

extent, it is also *pragma-dialectical* (its meaning depends on what can be done with it within the framework of scientific experimentation generally). From this standpoint, it also depends on the extent of its intersubjective validity. Therefore, Popper would not endorse Toulmin's "geometrical model of argumentation" in *Knowing & Acting*, although he would agree that such a model is unsuitable for the study of argumentation, leading ─ if it is presumed to be the only way to study argumentation ─ to scepticism.[38] For the reasons already mentioned, pragma-dialectics would tend to agree with both philosophers and, by majority of reason (as I have been analysing), with the author of *The Logic of Scientific Discovery* and *Conjectures and Refutations*. To this effect, as stated in van Eemeren & Grootendorst: "The geometrical view of reasonableness is an integral part of the demonstrative tradition, which is in fact anti-argumentative, although this fact is usually obscured by the veiled way in which this dogmatic view is presented."[39]

Similar considerations can be made about the "anthropological" or "common sense" model and the "critical" model of argumentation in Toulmin's book *Knowing & Acting*.[40] What is at stake in the former model is the idea that, in contrast to what follows from the geometrical approach, the analysis and evaluation of arguments, whatever they may be (including those of formal sciences, such as logic and mathematics), should occur within a specific context and that it depends on "justificatory", "procedural activities", which involve the rhetorical and pragmatic use of such arguments by groups of people.[41] Pragma-dialectics argues (as Popper presumably would too) that the latter model has advantages, moving from a formal, atemporal notion of universality to one of intersubjective validity; however, pragma-dialecticians counter this argument by claiming that the only way to escape the relativism to which it leads, restoring the universality and the formalization of the geometrical model in new terms and safeguarding all the advantages of Toulmin's "critical model" is, as van Eemeren & Grootendorst argue, a "discussion procedure in the form of an orderly arrangement of independent rules for rational discussants who want to act reasonably", that is, a model with its own "ideal model of critical discussion".[42] However, for all intents and purposes, it is clear that the latter model is neither anticipated nor prefigured in any of Toulmin's models, particularly his "critical model", for the simple

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his own use and its historico-philosophical connections (namely with Hegel and Marx) in some works such as "What is dialectic?" (Popper, *Conjectures*, 312-335).

[38] See Toulmin, *Knowing*, 86 *ff*.

[39] See van Eemeren & Grootendorst, *A Systematic*, 14.

[40] See Toulmin, *Knowing*, 160 *ff*.

[41] Toulmin, *Knowing*, 163 *ff*.

[42] See van Eemeren & Grootendorst, *A Systematic*, 16.

reason that this philosopher ignores a conventionalist, normative approach to argumentation such as Popper's or that of pragma-dialectics.[43] For this reason, van Eemeren conclusively argues that his "ideal model of critical discussion" has to do with Popper rather than Toulmin: "By adopting the viewpoint of a Popperian critical rationalist, we replaced the geometrical and the anthropological conceptions of reasonableness in the procedure by a critical conception."[44]

Having said this, what is the originality of Popper's epistemology when considered from the dialectical perspective of argumentation? Seven aspects must be highlighted:

(1) Science is a social phenomenon. This means that: *(i)*) it is not some "natural entity" (as was the case, for Popper, with logical positivism at the time), established independently of socially organized human will, which it is supposedly described and analysed (as in traditional interpretations on the subject), being rather a product of that organization; it expresses precisely the same rationality that is involved in other contexts (for example, the same rationality of our argumentation in different social, cultural and political institutions); in other words, science is also not what Rorty describes as a "natural kind", that is, "an area of culture which could be demarcated by one or both of two features: a special method, or a special relation to reality";[45] the reason for this is, as was said, that there is indeed no true separation between scientific rationality and rationality in general. It further means that (*ii)*) there is ontologically no objective ground in the world that founds a separate exercise of "scientific rationality" by contrast or in opposition to other forms of rationality.[46] Popper argues that the existence of such a ground for science must be presupposed, and that said presupposition, such as the presupposition of an "ultimate truth" aimed at by scientific theories or hypotheses, or of "progress" concerning such theories or hypotheses, is, as for Kant, a "regulative principle". The singularity of science consists in the fact that, as Popper observes partly in line with Kuhn's *The Structure of Scientific Revolutions*, "science is one of the very few human activities ─ perhaps the only one ─ in which errors are systematically criticized and fairly often, in time, corrected."[47] This means that there is no such thing as multiple distinct "rationalities" (a theoretical rationality and a practical rationality, for example, as traditional philosophy has proclaimed since Descartes and Kant),

[43] See Toulmin, *Knowing*, 209 *ff*.

[44] van Eemeren, *Strategic*, 32.

[45] R. Rorty, *Objectivity, Relativism, and Truth: Philosophical Papers, Vol. I* (Cambridge: Cambridge University Press), 46.

[46] Popper, *Conjectures*, 226.

[47] Popper, *Conjectures*, 216.

but rather one and the same rationality. (Popper's view on the connection between science and argumentation in general is essentially based on this, as I will show). From the point of view of their own conceptions, Perelman and Toulmin claim exactly the same, as I have suggested above. The same can be said of pragma-dialectics, with its conception of argumentative discourse in general and its model of critical discussion in particular. What all these approaches have in common is their search for *a unified conception of rationality*. Without such a fundamental *metaphysical presupposition* it would be impossible to consider the viability of any theory of argumentation.

(2) Such rationality is not arbitrary, although it is largely conventional, that is, governed by rules and/or conventions that are freely agreed between the parties involved (scientific communities, in this case); these rules should somehow be implicit in the theory and practice of both science and (as claimed in Popper's *The Open Society and its Enemies*) the other institutions concerned. (From this point of view, whereby ─ according to tradition ─ one can speak of a "scientific method", Popper would certainly oppose any "postmodern" versions of his own conceptions, such as the Lakatos research programs or Feyerabend's methodological anarchism).[48] As we saw, this is exactly what pragma-dialectics explicitly argues regarding argumentative discourse.

(3) As a methodology for scientific inquiry and as an exercise in rationality in general, it is more pertinent to deny and/or refute ("There is no…") a theory/hypothesis than to seek to verify or corroborate it because, according to Popper, no theory and/or hypothesis can ever be fully verified or corroborated. As he explains in a text already quoted: "Every 'good' scientific theory is a prohibition: it forbids certain things to happen. The more a theory forbids, the better is."[49] Popper mentions two cases of natural laws reformulated according to the criterion of falsifiability: "(...) For example, the law of the conservation of energy can be expressed in the form: 'There is no perpetual motion machine', or the hypothesis of the electrical elementary charge in the form: 'There is no electrical charge other than a multiple of the electrical elementary charge'."[50] From the standpoint of rhetoric and argumentation, this thesis means that the "reasonable", rather than the "rational", is the objective of the falsificationist methodology. In light of this, our traditional conceptions of rationality and of its exercise must be completely reconstructed. Our traditional way of understanding science, society, and political power in general needs to be completely reformulated.

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[48] See I. Lakatos, *Pruebas y refutationes: La lógica del descubrimiento matemático*, transl. C. Solis (Madrid: Alianza Editorial, 1976); and P. Feyerabend, *Farewell.*

[49] Popper, *Conjectures*, 36.

[50] See Popper, *The Logic*, 48.

(4) In the case of science, the violation of the above-mentioned rules is what enables us to ultimately distinguish between a "normal" — or a "correct" — practice and a supposedly "abnormal", fallacious, or metaphysical practice. The same can be said of argumentation in general in the different contexts or frameworks in which it occurs, as shown by the dialectical schools.

(5) Although conventional, i.e., agreed upon by the members of scientific communities, those rules underlie the theory and practice of science (particularly Physics) themselves, in the same way as the rules of the pragma-dialectical model underlie argumentative discourse in general; in Popper's view, it is these rules that explain the progress of science throughout history.

(6) The whole current scientific discourse and practice (or, if you prefer, the argumentation practiced in daily life or in any given institutional context) needs to be reread or reconstructed in the light of this kind of rules.

(7) When adapted and applied to society at large by each individual, such rules transform it into an open, democratic, non-authoritarian or tolerant society, as envisioned by Popper's *The Open Society and Its Enemies*, or by pragma-dialectics with the rules of its own model of critical discussion. A note by van Eemeren *et al*. confirms that "one may surmise that the rules will be accepted to people who are like members of Popper's *Open Society* in the sense that they are antidogmatic, antiauthoritarian, and anti-foundationalist and reject monopolies of knowledge, pretensions of infallibility, and appeals to unfaltering principles."[51]

Again: there is no doubt that, from all the seven points of view described above, a close parallel can be drawn between Popper's critical rationalism and dialectical schools, for example, the normativist conceptions of argumentation developed by Barth & Krabbe's *From Action to Dialogue*, Walton's *Informal Logic*,[52] Walton & Krabbe's *Commitment and Dialogue*,[53] van Eemeren & Grootendorst's *A Systematic Theory*, and van Eemeren's pragma-dialectics in *Strategic Maneuvering in Argumentative Discourse*. Considering more specifically a key topic common to all the above points of view (the rules of the normative model of argumentation): in Walton's *Informal Logic*, for example, the "persuasion dialogue" (i.e., argumentative discourse) rules are explicitly presented as negative, following Popper's perspective on science, society, and politics; fallacies (according to Popper's demarcation

[51] See van Eemeren *et al*., *Handbook of Argumentation Theory* (Dordrecht: Springer Reference, 2014), 577.

[52] See D. Walton, *Informal Logic: A Handbook for Critical Argumentation* (Cambridge: Cambridge University Press, 1989).

[53] See D. Walton & E. C. W. Krabbe, *Commitment and Dialogue: Basic Concepts of Interpersonal Reasoning* (Albany, New York: Sunny Press, 1995).

criterion) stem from the violation of those rules; and in order to understand science in Popper one must reconstruct it precisely in accordance with that type of rules.[54] In van Eemeren & Grootendorst the (five) rules for speech acts permitted under the ideal critical discussion model are formulated negatively or prohibitively. The first two are: "1. You must not perform any speech acts that are incomprehensible.— 2. You must not perform any speech acts that are insincere (or for which you cannot accept responsibility)."[55] More recently, van Eemeren explains that the choice of a negative rather than a positive or affirmative formulation of the rules aims to privilege or maximize the agreement between the parties involved in argumentation, as in Popper's epistemology. Thus, alluding favourably to a utilitarian principle of pragmatism in regard to argumentation (which "involves striving for the resolution of the difference of opinion satisfactory to all concerned, irrespective of whether this means victory for the protagonist or the antagonist"), the author explicitly calls for a negative formulation of this principle: "Bearing Popper's plea on behalf of falsification in mind, a 'negative' variant of the basic principle of utilitarianism seems to us more effective than 'positive' utilitarianism. Rather than maximization of agreement, minimization of disagreement is to be aimed for, because a procedure that encourages discussants to pronounce their doubts and to work out how far their differences can be resolved by critical testing is preferable to a procedure that seeks to ensure agreement."[56]

In pragma-dialectics, Popper's legacy (as well as that of Hans Albert, his disciple),[57] and, particularly, the contribution of the seven aspects mentioned above in connection to his insights for contemporary argumentation theory, involves — as I explained in the introduction to this chapter — explicitly identifying this theory with "critical rationalism" itself; moreover, this legacy is expressly admitted and interpreted, as we have seen, in the light of Toulmin's *Acting & Knowing* pioneering distinction between three types of approaches to this theory (geometrical or logical, anthropological, and critical). Bearing in mind what was summarized above in (3), (4) and (5) on the status of the rules for critical discussion, van Eemeren & Grootendorst assert that:

> The critical perspective of reasonableness combines certain insights from the geometrical and anthropological perspectives with insights advanced by critical-rationalists such as Karl Popper (…) and Hans Albert (1967/1975). By proposing a discussion procedure in the form of an orderly arrangement

[54] See Walton, *Informal*, 17-18.
[55] van Eemeren & Grootendorst, *A Systematic*, 77.
[56] van Eemeren, *Strategic*, 34.
[57] See H. Albert, *Traktat über kritische Vernunft*, 3rd ed. (Tübingen: Mohr, 1967).

> of independent rules for rational discussants who want to act reasonably, the aim of formalization is reminiscent of the geometrical approach to reasonableness. This formal procedure in the critical sense, however, is aimed at facilitating a discussion intended to resolve a difference of opinion. The proposed procedural rules are valid as far as they really enable the discussants to resolve their difference of opinion.[58]

Further on, the following specification can be read:

> In order to have a suitable medium for discussion, or at least a suitable frame of reference (or 'ideal model') for discussing the quality of argumentation, we must detach ourselves from various problematic peculiarities of ordinary language use and introduce new conventions. In our terminology, this is called the critical-rationalistic view on reasonableness, *which is in fact an extended version of the Popperian critical perspective*.[59]

3. Popper's theory of argumentation

Popper deserves the honour of being acknowledged as the first author in the history of western philosophical thought to have presented his argumentative model of science because before him science had never really been argumentatively conceived of. Moreover, even after Popper and to date, the application of argumentation to the study of science has been relatively residual. (In Toulmin, for example, with *The Uses of Argument*, and other works published after it, such model is supposedly conceivable; however, Toulmin never really dealt with the subject after *The Philosophy of Science: An Introduction*.[60] All that commentators may say in regard to this is speculative and conjectural. In Perelman, on the other hand, there are similar suggestions to Popper's although his standpoint is essentially that of rhetoric rather than the theory of argumentation as such. Perelman's questions, which are mostly critical of logical positivism, are of the following kind: why are these or

[58] van Eemeren & Grootendorst, *A Systematic*, 16.

[59] van Eemeren & Grootendorst, *A Systematic*, 17 (my emphasis). In *Fundamentals of Argumentation Theory* a more categorical statement reads as follows: "(…) In a Popperian vein, starting from the fallibility of all human standpoints, the methodological concept of critical testing is elevated to the guiding principle of problem solving. Of course, the ideal of critical discussion can also be a helpful point of departure in investigating how disputes are settled or can be settled". See van Eemeren *et al*. (ed.), *Fundamentals*, 280n16. To the same effect, see also section 10.4 ("The model of critical discussion") of van Eemeren *et al*. (ed.), *Handbook*, 527 *ff*.

[60] See S. E. Toulmin, *The Philosophy of Science: An Introduction* (New York: Harper & Brothers, 1953).

other axioms chosen in detriment of others in a given hypothetico-deductive explanatory system? What does ultimately ensure interpretation in such systems besides merely logical and epistemological criteria? However, for the author of *Traité de l'argumentation* there is no place in science for the study of argumentation *per se*. Unfortunately, besides the abovementioned references, and in contrast to Toulmin and Perelman, Popper is only rarely cited and studied in this respect by the relevant specialised historiography.[61] In 1945, with *The Open Society and its Enemies* and later in *The Poverty of Historicism*, Popper applies his model of argumentation to culture, society and politics in the more general context of a reconstruction of the history of western philosophical thought in ancient Greece (the pre-Socratics, Socrates, Plato, and Aristotle) to the present. There, as I have already observed, the expression "critical rationalism" is used for the first time to designate Popper's conceptions. The fundamental idea is basically the same, although some details must be mentioned and analysed.

(1) What we call "reason" or "rationality" in Western societies in general since ancient Greece is not a simple discursive or intellectual activity; it is essentially incorporated in customs and traditions, in social, cultural and political organization, in the sciences, philosophy and the arts, and therefore, from a philosophical viewpoint, there is not one, supposedly "theoretical", reason versus another, supposedly "practical", reason. In contrast to traditional distinctions, there exists since modernity only one and the same rationality. As I have explained, Toulmin, most importantly, shares precisely this fundamental conception, as shown in some of his works published since the 1960s (most of which reveal the influence of R. Collingwood's philosophy of history).[62] It has also been noted that pragma-dialectics embraces such a conception.

(2) Reason (or rationality) is essentially argumentative and conjectural: it consists in seeking to challenge, and ultimately refute, in any of its fields of application, a given theory or hypothesis which is advanced (this is what "arguing" means for Popper), with the intellectual and ethical availability

[61] For an example of exactly this, see F. van Eemeren & B. Garssen (ed.), *Controversy and Confrontation: Relating Controversy Analysis with Argumentation Theory* (Amsterdam/ Philadelphia: John Benjamins Publishing Company, 2008), 126-128.

[62] See Toulmin, *Knowing;* Toulmin, *Human*; S. E. Toulmin, *The Return to Cosmology: Postmodern Science and the Theology of Nature* (Berkeley/Los Angeles/London: The University of California Press, 1982); S. E. Toulmin*, Cosmopolis: The Hidden Agenda of Modernity* (Chicago: The University of Chicago Press, 1992); S. E. Toulmin, *Return to Reason* (Cambridge, MA/ London: Harvard University Press, 2001); and R. G. Collingwood, *The Idea of History: With Lectures 1926-1928*, ed. & introd. by J. van der Dussen (Oxford: Oxford University Press, 1946).

to complete this challenge or refutation.[63] Popper does not analyse in detail the way how this, i.e., the challenge, or the refutation, can and should be presented; as I have been saying, this suggests that Popper is not interested in a theory of argumentation *per se*, or, much less, in a theory of argument.

Leaving aside this limitation, Perelman and Toulmin ─ as I have been noting so far ─ and pragma-dialectics later defended precisely the same fundamental conceptions (1 and 2). Given the close connection between reason and argument, which all these philosophers (like Popper) identify from their different points of view, these conceptions become extraordinarily powerful from the standpoint of rhetoric and argumentation, having being transformed, from the second half of the twentieth century, into a new paradigm of rationality, as is shown in this article.

(3) Because it is argumentative and conjectural, this reason is not dogmatic and authoritarian: it is an essentially open, sceptical though humble and optimistic reason as regards the possibility that we may one day finally be able to decide in the face of opposing and apparently uncontroversial arguments. This means that this is not a speculative reason in the traditional sense of the concept ─ that of Plato to Hegel and Marx. It is not a "superior" and "legislative" faculty, in light of which we might be able to intellectually construct social, cultural, and political institutions, impose more or less ideal models for them, and predict the history of societies (historicism). It is not, therefore, a "collectivist" reason like the reason posited by those philosophers, but a different, essentially individual, ethically and/or morally open and tolerant reason.

The two volumes of *The Open Society*, published in the mid-forties, are the most brilliant social, cultural and political application of that latter thesis by Popper, who also developed an important epistemological application, a little later, in works such as *Objective Knowledge* and in several articles gathered in *Conjectures and Refutations*. Popper's falsificationist epistemology requires that the traditional metaphysical categories, from Descartes and Kant to the present, be suspended or at least completely reformulated. Insofar as argumentation is crucial to this epistemology, one could say that, in his own way, Popper shares Perelman and Toulmin's views as regards reducing epistemology to the limits of argumentation. (For example, categories such as "objectivity" can be reinterpreted and emptied of their ontological meaning ─ which leads to barren discussions such as the ones on the status of "atomic statements" or "protocol sentences" in which the logical positivists of the 1930s did engage.[64] The idea is, as Perelman later argues in *Traité*

[63] See K. R. Popper, *Objective Knowledge: An Evolutionary Approach* (Oxford: At the Clarendon, Press, 1972), 1-31.

[64] On this discussion, which had some impact on Popper's *The Logic*, see F. Barone,

de l'argumentation, all that is agreed upon in the ambit of argumentation is "objective").

(4) History, as Popper brilliantly and revolutionarily formulates it in *The Open Society*, "has no meaning".[65] (This formula synthesizes one of Popper's fundamental thoughts until at least the late 1960s, a time which, as I argued at the beginning, measures the impact of his conceptions on contemporary theories of rhetoric and argumentation). History "has no meaning" in the sense that it would be possible to infer or deduce a teleologically--oriented, previously determined and designed end, as happens for example, philosophically speaking, with speculative reason in Hegel or Marx (and his successors, like the Leninists). Announcing that "history has no meaning" amounts to the same as stating that "absolute, definitive truth as the horizon of our inquiry, has no meaning" for science.[66] In both cases we have to conform to the limits of critical rationalism as presented by Popper. And that is where the key role of argumentation lies ─ at least, as I will show, until the late 1970s (since Popper's philosophy, the philosophy of the "second Popper" as it were, will from then on take a clearly metaphysical and ontological direction).

The last two theses show how Popper is led to reject and deconstruct, philosophically speaking, all political ideologies based on the models that I have mentioned and which favour institutions and the collective in detriment of individuals and/or the individual and the singular. Popper places special emphasis on these theses, which is understandable provided that one has interiorised the fundamental idea, developed throughout the philosopher's work (namely, *The Open Society and its Enemies*), that what has been called "reason" in philosophy since the Greeks is also essentially a social, cultural, and political reason, and that this same reason has led not only to prominent closed and authoritarian societies ─ such as the Nazi and Stalinist and Soviet societies ─ but also to the apparent debacle of western science and civilization as a whole, as shown by the two World Wars in the 20th century. In this as in other matters, as I have said, a parallel could be drawn between Popper, who, as is known, was Austrian and had a Viennese education, and Toulmin's Wittgenstein, or rather, the way the latter philosopher reads Austro-Hungarian society from the last quarter of the 19th century to the early 20th century in books such as *Wittgenstein's Vienna*, by Toulmin and Janik.

"La polémique sur les énoncés protocolaires dans l'épistémologie du Cercle de Vienne", in: *Le Cercle de Vienne: Doctrines et controverses*, ed. J. Sebestik & A. Soulez (Paris: Meridiens Klincksieck, 1986), 181-196.

[65] See Popper, *The Open*, vol. II, 256.

[66] Popper, *Conjectures*, 215-250.

4. Conclusion: on the contemporary gap between philosophy and argumentation

I have been suggesting that only with some reservations can we speak of a theory of argumentation in Popper's philosophy. It is *not necessarily* about argumentation — i.e., a more or less specialised field of research that could be studied *per se* — but rather rationality (or the exercise of human reason) in general. This explains why Popper never developed a model of argumentation as such, contrary to what happened in the 20th century with others such as Toulmin and, to some extent, Perelman; consequently, it further explains why there is no theory of argumentation to be found in Popper, that is, a theory about the way in which arguments in general can be analysed, evaluated and represented. (As mentioned in the introduction to this chapter, some commentators have argued otherwise; however, they cannot justify their position based on the philosopher's own texts or on the theory of argumentation when interpreted from a historical, philosophical and systematic point of view). The only explanation that I can find for this is that Popper assumed that philosophy as a whole could not be reduced to and/or assimilated into "rhetoric" (as Perelman and Toulmin called it at the time from their different, separate perspectives) or into a theory of argumentation. (In recent years I have controversially defended that such a reduction and/or assimilation is one of the major consequences of the contributions of the abovementioned authors to what we now call a "theory of argumentation").[67] Popper always believed, especially after the debacle of western philosophy which was announced and celebrated by Wittgenstein, Kuhn and Quine in their major works from the 1960s and '70s (*Philosophical Investigations*; *The Structure of Scientific Revolutions*; and *Ontological Relativity and Other Essays*, respectively)[68] that it was possible to do philosophy along the lines of what in the past (up the end of the 20th century) was called, for example, the "philosophy of science", independently from rhetoric and/or the theory of argumentation. In this matter Popper is at variance with the Toulmin that we know, particularly the Toulmin of *Return to Reason*.[69] It is exactly for that reason, I am inclined to suggest, that after the 1970s and in contrast to the previous years, Popper's philosophy took a clearly metaphysical and ontological turn, as *The Postscript to the Logic of Scientific Discovery* sho-

[67] See Ribeiro, *Retórica*, 21-51.

[68] See L. Wittgenstein, *Philosophical Investigations*, transl. by G. E. Ascombe (Oxford: Blackwell Publishers, 1953); and W. van O. Quine, *Ontological Relativity and Other Essays* (New York: Columbia University Press).

[69] See Ribeiro, *Retórica*, 127-51.

ws.[70] Be that as it may, the impact of Popper's "critical rationalism" from the second half of the 20th century to the present has been huge, although — as I have been arguing throughout this chapter — it was essentially diffuse and unclear, that is, it did not substantially and/or programmatically affect in a direct manner the conceptions upheld by the major schools of argumentation: pragma-dialectics, formal dialectics, and informal logic, which emerged and developed independently from it (although, given what we may call the "philosophical environment [or climate]" of the time, they were most certainly influenced by it). It would possibly have had a deeper, more decisive impact if during the whole of the second half of the 20th century Popper had not been an avowed enemy of what we still call "analytic philosophy" today, and had he not been (like Toulmin) generally ostracized by it. The major contribution of this rationalism both to contemporary theory of argumentation and to what we now more generally call "critical thinking" consisted in having emphatically shown that human reason is essentially dialogical and argumentative, that rather than being a finished, definitive essence, it is something which is (permanently) under construction.[71] Thus, and virtually for the first time in the history of western philosophy, it has thus largely destroyed the myths from which both science and society have created "essences" whose nature we were supposed to describe and analyse. Hence, Popper's conventionalism and falsificationist normativism as regards the philosophy of science is clearly in line with contemporary dialectical schools of argumentation; the reason is mostly that, contrary to what happened with logical positivism in Popper's time, it is/was not a matter of logic or of its subordinated philosophy of science. And his conception of society (a sceptical, though ultimately basically optimistic conception) as a permanently open space of argumentation, discussion and criticism is clearly in line with our present conceptions today, especially those that were inspired by the above-mentioned schools.

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[70] See K. Popper, *L'Univers irrésolu: Playdoyer pour l'indéterminisme*, transl. J. Bouveresse (Paris: Hermann, 1984), 93 *ff*. What Popper's criterion of falsifiability and the associated theory of argumentation are ultimately about is the elimination of metaphysics, although now through refutation rather than confirmation. Presumably, both this criterion and its focus on argumentation are incompatible with ontological theses such as the one mentioned. The fact that they have finally emerged and moved centre stage 25 years after the English edition of *Logik der Forschung* shows that, as I argued above, what matters in Popper is his *philosophy of science*, not a theory of argumentation as such.

[71] Popper's connection with so-called "critical thinking", along with that of the normative schools of argumentation theory, is fundamental and has often been suggested. It should nonetheless be noted that, in some of its versions, "critical thinking" does not necessarily presuppose or involve a theory of argumentation, much less a theory of argument, as a specialised field of research. See H. J. Ribeiro, *Argumentação, pensamento crítico e filosofia (e outros ensaios)* (Lisboa: Ed. Esgotadas, 2020.

Popper's legacy draws our attention to what could be described as a "divorce between philosophy and argumentation theory". Like Jürgen Habermas, for example, Karl Popper has a strong, firm conception of the key importance of argumentation for contemporary philosophy; this conception — as he shows as early as the 1940s in *The Open Society and Its Enemies* — is comprehensive because it includes a more general conception of human reason and its role in the development of western and European societies from Classical Greece to the present.[72] But it definitely lacks, like Habermas himself, a *theory of argument* as such. This explains why both philosophers are not mentioned and appreciated as often as they should be in the historiographies of rhetoric and argumentation throughout the 20th century. However, in contrast to this, the major contemporary schools of argumentation have strong, firm conceptions on a theory of argument (whatever that theory may be) even though such conceptions are sometimes not based on more general conceptions of the philosophical and, particularly, of the metaphysical presuppositions of argumentation, such as those that concern Popper and Habermas. The study of this type of presuppositions is absolutely key to guaranteeing the so-called "interdisciplinarity" of the theory of argumentation in the future, based on solid grounds. For this interdisciplinarity to be successful, it must be based on a foundational matrix; in my view, only philosophy can provide that (certainly, in very different terms from those of the past). Therefore, and by way of conclusion, I will say that Popper is not the only philosopher who has a limited view of argumentation and the way it should be studied. Praise where praise is due! A similar objection, albeit for the opposite reasons, can be raised against contemporary theories of argumentation.

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[72] See J. Habermas, *The Theory of Communicative Action. Vol. I: Reason and the Rationalization of Society* (Cambridge, UK: Polity Press, 1984); and J. Habermas, *The Theory of Communicative Action. Vol. II: The Critique of Functionalist Reason* (Cambridge, UK: Polity Press, 1987). For a general parallel between Popper's conceptions and those of Habermas, see G. Stokes, "Popper and Habermas: Convergent Arguments for a Postmetaphysical Universalism", in: *The Cambridge Companion*, 318-351.

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