Aristotle's *Organon* in Old and New Logic

1800–1950

Edited by
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BLOOMSBURY ACADEMIC
LONDON • NEW YORK • OXFORD • NEW DELHI • SYDNEY

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The Implicit Commitment to Truth in Dialectical Games

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Introduction

Almost exactly 100 years ago Sir David Ross was arguably expressing a general consensus on the *Topics* by the following general statement:

> We have neither the space nor the wish to follow Aristotle in his laborious exploration of the *τόποι*, the pigeon-holes from which dialectical reasoning is to draw its arguments. *The discussion belongs to a by-gone mode of thought*; it is one of the last efforts of that movement of the Greek spirit towards a general culture, that attempt to discuss all manner of subjects without studying their appropriate first principles, which we know as the sophistic movement. What distinguishes Aristotle from the sophists, at any rate as they are depicted both by him and by Plato, is that his motive is to aid his hearers and readers not to win either gain or glory by a false appearance of wisdom, but to discuss questions as sensibly as they can be discussed without special knowledge. *But he has himself shown a better way, the way of science; it is his own Analytics that have made his Topics out of date*. [1]

At the time, this general consensus was more or less along the lines that the *Topics*, unlike any "serious" scientific or philosophical work, is not about truth, but about winning in a debate; for the most part, it was thought, it is a manual for those who want to take down their dialectical opponent almost at any cost.

In this context, let us imagine the following situation. Two opponents meet. One of them defends a specific thesis; the other one defends the contradictory of that thesis. By necessity, one of them defends a false thesis. Even in the case that the same person believes, or even knows that she defends a false thesis, she should proceed to defeat her opponent. There is no doubt that Aristotle is actually describing scenarios in the *Topics*, where practitioners of this sport knowingly argue against the truth, in order to win. For instance, in 156a7–13 the Questioner is luring her opponent into accepting crippling premisses, hiding them away within a cloud of irrelevancy. In 162b5–7 the

Answerer is warned to be on her guard, when a Questioner is using an argument that looks like a *reductio ad impossibile* against the thesis she is actually defending, but, in reality, it is not an argument against it.[2] This is because an impossibility does follow from the premisses endorsed by the Answerer, but the thesis defended by her plays no role in the construction of the contradiction. In yet another passage (108a26–31) Aristotle actually advises Questioners to rely on the potential linguistic awkwardness of their opponents and employ equivocation for their own advantage. The *Topics* is full of such examples, which are not very flattering regarding the trustworthiness of the antagonists involved. The trouble with them is not necessarily that they ignore the truth, or, even worse, that that they know what the truth is and take pains in order to distort it. They might or might not be aware of the truth-value of the thesis under discussion, as they also might or might not be trying to hide it away. What the main trouble is, is that they are allowed to mislead their opponents by presenting non-valid arguments as valid. And if this goes unnoticed, well, then, they win.

Nowadays, there is no longer contempt for the *Topics* among scholars. At the same time, there is still a general agreement that this work is not concerned with truth, at least not primarily so.[3] However, this agreement no longer bears any negative undertones, as it used to. Jacques Brunschwig, one of the pioneers in the resurgence of interest for the *Topics*, has argued that the dialectical games as presented in there are nothing but philosophically uninteresting, despite the absence of any "serious concern for truth" from them.[4]

> This is a dialectic without tears, without drama, *with no serious concern for truth*, no involvement in the tragedies of life, no connection with the conflicts among persons, no hidden part to play in the struggle for domination. This conflict-free view of rational discussion – probably linked with Aristotle's conception of *theoîria as a purely speculative, disinterested activity* – may seem over-idyllic and unrealistic to us, who are living after Hegel and contemporaneously with Karl Popper. (Brunschwig, 1984, 40 our emphasis)

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We agree that no dialectician has in principle any serious concern for truth. Nonetheless, we will try to build upon a necessary precondition of these debates: a mutual agreement between the two players having to do with validity. We suggest that this agreement, which we shall call "bilateral consensus on validity," is an implicit commitment to truth. Let us first spell out what we mean by this. By "bilateral consensus on validity" (**BCV**) we have in mind the following condition by which both parties in a debate must abide:

> **BCV**: *While (i) the premisses the Answerer endorses in the game are non-committing with respect to what she actually believes, and (ii) the arguments presented as valid by the Questioner say nothing about what she really believes about their validity, there is a preliminary agreement between the two parties that (a) if an argumentative schema employed by the Questioner during the game is accepted as valid by the Answerer and (b) a conclusion follows by that schema and a number*

of premisses that the Answerer has accepted, then, the Answerer must accept this conclusion.

In Sections 10.1 to 10.5, we advance the same argument with the more technical and formal appendix. Although the argument in the main body of the paper is self-subsistent, we advise the reader to go through both of them.

10.1. Truth in Dialectical Debates

Let us go back to the reasons why dialectical debates seem to be bearing no commitment to either truth or validity.

During the dialectical debate, the parties involved are allowed to "believe" in whatever they feel like saying that they believe. "Believing that p is the case," as opposed to "p being the case," is not factual. On top of that, for one to say that she believes that p is the case might not even be sincere. The propositional attitude of belief falls within the scope of yet another propositional attitude, namely the one introduced by the "saying that …" operator. Thereby, debaters during the game are by no means compelled to stand for what they truly believe. Nor are they obliged to suggest to the opponent patterns of reasoning that they themselves consider to be valid.

The strategic goal of the Answerer consists in choosing, at each stage of the game, between the "Yes" and "No" answers, the one that helps her best at this particular stage. As she is mainly interested in non-contradicting herself, what "helps her best" at some stage might be the endorsement of a statement that she herself does not believe in. In general, and throughout the game, the Answerer is allowed not to speak her mind, if she thinks that this will undermine her interests in the game.

Regarding the Questioner and since her goal is to make the Answerer contradict herself, it might be in her best interests to suggest to her opponent that a contradiction validly follows from premisses that the latter has previously endorsed, while, in reality, it does not. By so doing, the Questioner is actually suggesting to her opponent the validity of a non-valid argument.

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Let us now turn to how the above two strategic approaches regarding Questioner and Answerer naturally emerge from the settings of the game itself. At the beginning the "universe of beliefs" of the Answerer consists of the thesis she has chosen, and the "universe of beliefs" of the Questioner of the contradictory of that thesis. The Questioner keeps asking questions to the Answerer that are suited for Yes/No answers. The Answerer keeps expanding her "universe of beliefs" by an amount of propositions equal in number to the replies she provides to these questions. One can recursively define this universe as follows: If, at stage n, the Answerer is asked whether she believes that p, and she says "Yes," her universe is augmented by p; if she says "No," her universe is augmented by the contradictory of p, "c(p)" henceforth.

Parallel to this pilling up, another process is under way. This is a function of (1) the occasional universe of beliefs of the Answerer and (2) of whatever can be arguably inferred from it. For example, say that at stage n the Answerer's universe of beliefs is B. If, according to the Questioner, p can be arguably claimed to validly follow from B, then the Questioner is entitled to claim p from the Questioner at stage n+1.

To see this, suppose that, at stage n+1, (1) the Questioner asks "p?" and (2) both Questioner and Answerer believe that p is the case, and suppose also that (3) they agree upon the fact that p follows from B. Now, the Answerer is still under the scope of the "you do not need to speak your mind" general allowance, just the same as before. So, in principle, she can still reply that p is not the case. It very much looks like she ought to do this in case p undermines her interests in the game. One possible worry about this kind of attitude by the Answerer is that p does actually follow from B, or, at any event, that the Answerer believes that it follows. This worry, however, can be dismissed for the reason that these debates are not for the sake of truth but for the sake of winning. Who cares if p actually follows, if the Questioner cannot build the case that it does? Even worse, who cares that p follows, if the Questioner cannot build the case that it does *to the mind of her opponent*? And it can be even worse: Who cares about all the above, if she cannot make her publicly admit that she believes that it does follow? In other words, no matter whether p validly follows, no matter whether the Questioner is capable of producing a sound proof-theoretical argument that it does follow, and no matter whether the Answerer knows that this argument is sound, will she not publicly admit that it is; no strategic advantage can be gained for the Questioner. So, to the Question "p?" by the Questioner, the Answerer is, in principle, allowed to answer in the negative, even in a context as the one described above. However, if she publicly agree with the Questioner that p follows, she ought to reply that p is the case, no matter how harmful this reply could be for her.

It follows that some agreement regarding validity, even if ad hoc, even if for a specific argument of a specific game, is a prerequisite for any end-game situation, where the Questioner wins. Otherwise, the Answerer will always be allowed to deny the validity of any validity claim that can put her thesis in danger, and thus turn the contest into parody.

Thereby, in order to avoid this kind of parody, one must strengthen **BCV** as follows:

> **BCV***: *Whereas (i) the premisses the Answerer endorses in the game are non-committing with respect to what she actually believes, and (ii) the arguments suggested as valid by the Questioner say nothing about what she really believes about (their) validity, there is a preliminary agreement between the two parties such that (a) if an argumentative schema employed by the Questioner during the game is accepted as valid by the Answerer and (b) a conclusion follows by a schema from a number of premisses that the Answerer has accepted, then, the Answerer must accept this conclusion and (c) it is possible that an instance of (a) might emerge in some game.*

(c) above can be also stated as follows: *in the domain of all possible dialectical games there is at least one, where (a) takes place*.[5]

10.2. Forms of Dialectical Questions

At this point, we need to make a digression in order to be clear on a key distinction regarding the kind of questions Questioners are supposed to ask in the debate.

Let us baptize them first before we explain them. On the one hand, there is the "naked question" and on the other the "*sequitur* question." Suppose you are the Answerer and suppose that "p?" is asked at stage n. If the Questioner does not suggest to you, while putting the question, that your universe of beliefs, that is, B, at stage n, compels you to answer "Yes" rather than "No" or *vice versa*, this is a "naked assertion." If the Questioner suggests to you that your universe of beliefs at stage n compels you to answer "Yes" rather than "No" or *vice versa*, this is a "*sequitur* question." (The corresponding assertions involved in the relevant answers will be called "naked" and "*sequitur*" assertions respectively.)

We now provide an example showing how necessary this distinction is for the very possibility of the dialectical game. Notice that the first "naked assertion" by the Answerer is the endorsement of the declarative statement she has chosen at the beginning of the game. This assertion is certainly naked, since, prior to that stage, her universe of beliefs is empty, and so there can be no suggestion by the Questioner that she ought to endorse it. Following this one, an indefinite number of other naked assertions will join this set. Now, the general goal for the Questioner is to make the Answerer contradict herself. For any specific game where the Questioner wins, there is an end-state, where the Answerer asserts c(p) and p makes part of her universe of beliefs at that stage. In these general settings, it makes absolutely no sense for c(p) to enter B in the form of a naked assertion. Only an idiot would have asserted p at some stage m<n, and then assert c(p), in the form of a naked assertion, at n. If these games were made of naked assertions uniquely, then the Questioner would never win over a non-idiotic opponent. This is because, in such a case, there is a simple algorithmic routine that can make the Answerer the winner in all possible games: "Keep a record of what you have answered at any stage. If you have asserted p at stage n, and "c(p)?" is asked at stage m>n, just say 'No.'" This simple routine would have been effective. "You have asked me what I think about p and I have replied. Now, why on earth do you ask me about c(p)?" the irritated/ironical Answerer would have responded. It follows that the only assertions that may result in a favorable situation for the Questioner end-state are *sequitur* assertions, not naked ones. Besides, we have called them "*sequitur* assertions" for exactly that reason. The Answerer is not asked out of the blue ("naked" modality) whether or not she agrees with p; she is asked whether or not, upon the evidence of some previous assertions of hers, p follows; the question is not "p?" unless this is understood as "<sc. B therefore> p?"

The structural aspect of these games that makes room for victories by the Questioner is the following. Exactly because the Answerer is committed to p, she will lose the game if she agrees that c(p) follows from other things she has also committed herself to during the game. More formally, the idea is that, if (1) p belongs to B(n), and (2) the Answerer is asked "c(p)?" at some stage m>n, and (3) it is suggested to her that c(p) follows from B(m), and (4) *she agrees to this suggestion*, then, the Answerer

is compelled to answer "Yes." By doing so, she adds c(p) to her universe of beliefs at stage m. Thereby, her universe of beliefs now contains p and c(p) and she loses. There is no way for one to overstate the formal importance of (4) above. That c(p) actually does follow (or does not follow) from B(m) is from the formal point of view[6] totally irrelevant.

A way for one to show that what really follows from what is from the formal point of view irrelevant to the progress of the game is when c(p) does not actually follow from B, but a cunning Questioner convinces her opponent that it does. Now, if she manages to do so, and the Answerer asserts c(p), the Answerer loses just the same. As a matter of fact, Aristotle has written an entire treatise (arguably the last book of the *Topics*) in order to make people capable of defending themselves against such opponents. The *Sophistical Refutations* is about cunning debaters, the sophists, who lead their opponents to contradiction (and thereby refute their thesis), by non-sound arguments.[7] The presence of the *Sophistical Refutations* within the *corpus* attests to the fact that, whether or not c(p) really follows from the Answerer's universe of beliefs is of no formal importance to the game itself. Everything hangs upon whether or not the Answerer concedes that it does; (4) is formally indispensable.

10.3. The Game as It Unfolds

In order to make evident a crucial logical consequence of **BCV***, we will idealize the competitors and assume them to be omniscient both regarding truth-values of sentences and regarding validity of inferences.[8]

With a couple of competitors of this idealized sort in mind, consider game G, where thesis p is discussed. Assume that thesis p is true. The competitor charged with p will be called the "righteous one"; the other one will be called the "mischievous one." How must the Questioner proceed? Her strategy is (1) to isolate premisses that can yield her thesis, (2) try to put them into the Answerer's universe of beliefs by naked questions, and, finally, (3) lead the Answerer to her own thesis by *sequitur* questions.

Let us look closely at a setting of this sort. To begin with, assume that a sufficient number of such premisses are already in the universe of the Answerer, and that a final *sequitur* question is attempted. For example, if the Questioner defends "p," a *sequitur* "p?" question is asked. The Answerer must say "No," for otherwise she loses. But since this is a *sequitur* question, she must also be having a proof-theoretical argument according to which concluding from the same premisses to the Questioner's thesis is not sound. That is to say, she must have a convincing account to back up this attitude, namely an argument such that people might be persuaded that this conclusion does not follow.[9] At this point, we enrich our setting by the information that this way of drawing p from the universe of the Answerer is valid. If so, no effective defense by the Answerer can be valid. Since the Answerer is omniscient and knows that there cannot be any effective defense, her argument against the validity of the Questioner's claim will be called a "sophism" and she herself a "sophist." As one can easily anticipate, we will call her rival a "philosopher" and her *sequitur* claim a "proof." Now, keep G exactly as it is, except for a mutual change of assignments regarding the theses defended. The

same Questioner gets assigned c(p) and the same Answerer, p. With this distribution, it is now the Questioner who is the sophist and the Answerer who is the philosopher. The Questioner is the sophist insofar as she needs to build an unsound argument leading to the false c(p) in order to win, and the Answerer is the philosopher, insofar as she has to defend herself against any such attempt.

If the above analysis is correct, we can arrive at a first conclusion regarding those who play such games. The only thing that matters is dialectical skill. "Being a philosopher" and "being a sophist" is no essential quality here. These are accidental features of the competitors depending on the occasional assignments.

The role of the Answerer is the one that will lead us to our main point. What is her goal in this game in general? As said already, it is to beat all attempts by the Questioner to drag her to contradiction. During the game, she is constantly under the general allowance "you do not need to speak your mind." This allowance cuts across naked and *sequitur* assertions. The only difference between the two is that, when a "No" reply follows a *sequitur* question, the kind of further justification appropriate to it will not concern the content of the rejected premiss but the reason why, according to the Answerer, it does not follow from B.

This unique difference is crucial. In order to see this, let us think anew of our idealized debaters as they are sitting in their corners before the match. At this stage, their sets of beliefs are empty. Following the initial assignment, one of them receives the true thesis and the other the false one. Surrounding the received thesis, the Questioner constructs a corresponding universe of beliefs. She will be trying to put these in the universe of beliefs of the Answerer. The Answerer must do the opposite. She needs to avoid as many of these as possible. Notice, at this point, that even if the Answerer manages to avoid all of these, she is not necessarily safe. Equally so, even if she allows some of them in, she is not necessarily doomed. We have seen already why that is. The Questioner needs to undergo a final step, no matter how favorable for her interests the shape of the universe of beliefs of the Answerer might have become. She needs to make the Answerer concede to the fact that these beliefs imply the contradictory of her thesis.[10] As previously said, this final step is achievable through *sequitur* questions alone. Here the Answerer can try finding rescue in denying that it does, even if it does so. Similarly, even if the Answerer successfully avoids any premiss that inferentially undermines her thesis, the Questioner can still try suggesting to her that some of the ones she has endorsed, do so. Again, the attempt will be made by a *sequitur* question.

10.4. End Game States

Suppose that our idealized debaters have, while sitting in their respective corners and following the initial assignment, amassed together what needs to be amassed in order to properly defend their theses. If the question is "p?" and p is naked, the only thing that an Answerer needs to do is to go through a specific inventory of hers (possibly named "To Be Avoided") and, if she finds p in it, reply by "No." This is the inventory containing premiss that might inferentially undermine her thesis. By the time that naked p is asked, she already knows that, in the context of this particular game, she

does not "believe" in p. Yet, if the question is a *sequitur* one, the same "To Be Avoided" inventory is not enough for effectively assisting her in her efforts to avoid contradiction. Even if she finds this p there, she must think twice before replying. This is because the suggestion of the Questioner, if the question is a *sequitur* one, is that, exactly because the universe of belief of her opponent is actually in some specific shape, some subset of it implies p, and therefore, p must be added into her universe whether she likes it or not. If so, p might be coming as a surprise to the Answerer; this is not a *déjà vu* for her. In other words, and if she finally concedes that it does follow from such a subset of her actual universe, p will be practically imposed upon her. "Reason" (call it λόγος in case you wish to stay away from anachronisms) will have taken over. The specific conclusion suggested by "reason" in this specific debate might be false, irrational even (consider the case, where the sophist wins), but this is not important as far as the motivation behind its assessment is concerned. p has been assessed, because both Questioner and Answerer have recognized that there is an authority (Reason) that can take the Answerer by surprise and compel her to believe things she previously denied, or, most crucially, to believe things contradicting those she is actually believing. Again, the opponent might have fooled her all along, but this is not the point. The point is that, in order for the game to be possible in the first place, there must be a preliminary agreement between the two, according to which such an eventuality is possible. That is to say: they must both recognize the possibility of a game state, where the Answerer realizes that, because of some things she is already committed to, other things necessarily follow, and that she has no a priori control over the shape of these things. In other words, there must be a preliminary agreement between the two that an end-state where the Answerer loses, is theoretically possible.

Let us go back to the description of our two idealized opponents. Both of them have been thought of as having amassed together all beliefs that might help in a specific distribution of contradictory claims. As for naked questions, the Questioner knows which questions will hopefully charge the Answerer with inferentially undermining beliefs. Since idealized, the Answerer knows them too, and for every belief p, such that it might undermine her thesis, she is prepared to answer with "No." Alongside this pilling up another process is underway. At every stage n of the game, both Questioner and Answerer are aware of inferential claims that can generate *sequitur* questions that undermine the Answerer's thesis. By being both aware of the Answerer's universe of beliefs at n, they both know of inferential claims of the form "X, therefore q," where X is a subset of this set and q is an inferentially undermining belief for the thesis of the Answerer.[11] These correspond to "q?" *sequitur* questions, to which the Answerer should avoid replying with "Yes."

In principle, one can assign at the beginning of the game a set of contentual and inferential beliefs to each player. As for the Answerer, contentual beliefs help her to navigate through the game, when naked questions are asked, and inferential beliefs, when *sequitur* questions are asked. Notice at this point that in order to provide a reasonably accurate account of what the players are doing, one needs to assign to them *Weltanschauungs* containing both contentual and inferential beliefs. Competitors must have opinions both with respect to what is the case in the world *and* with respect to validity. Since one can express one's opinion about the validity of an inference by a

declarative statement, both these opinions represent beliefs of the players. Thereby, both of them can be put in the form of a question to the Answerer. That the Answerer will eventually be asked (implicitly or explicitly) what she believes about validity is seldom stressed in the bibliography. Usually, in the literature competitors do not get assigned beliefs other than beliefs about ground level propositions, like "virtue can be taught," "one must be pious," and the like, not higher-order ones about validity/invalidity. Belief, however, by being a closure concept, can range over all kinds of declarative statements. If p is a declarative statement, one can believe that p. "From the set of premisses X, q follows" is a declarative statement as well and so one can do the same. Moreover, players not only can, but also must uphold and express some of their beliefs on what follows from what during the game. The Questioner does exactly that by the *sequitur* kind of questions, and the Answerer by the way she reacts to these.

10.5. Validity Is an Implicit Commitment to Truth

We now turn to the final stage of our account as for why **BCV*** is an implicit commitment to truth.

By the time the initial assignment is made, both idealized arguers must have an overview of the premisses that can inferentially undermine the thesis of the Answerer. During the game, the Answerer must avoid as many of these as possible. Clearly, she cannot feel entirely safe, even if she somehow manages to keep them all out of her set of beliefs. This is because the Questioner might at any time and by a *sequitur* question lure her into thinking that a conclusion undermining her interests in the game does actually follow from the premiss she has accepted.

Imagine at this point that an idealized Answerer of a random game feels confident that she can find a satisfactory defense for any *sequitur* attack by the Questioner. Now, the Questioner, who is idealized too, knows exactly what the Answerer is thinking in the same setting. Moreover, she trusts her judgment on that as if it is her own; she is her equal, after all, they are both idealized. Since she does not like losing, she refrains from entering the debate. Moreover, if she further believes that her opponent has means to do away with any undermining *sequitur* question in all possible games, she must abandon the sport. For dialectical debates to be meaningful, Questioners and Answerers must uphold the view that there are possible distributions such that, during the game, unwanted conclusions can be forced into the Answerer's set of beliefs by means of *sequitur* questions. Now, assume that this is the case indeed, and that in one dialectical debate the Answerer loses, because of the enforced presence of one contradictory belief in her universe. What does this mean about her real universe of beliefs? Neither the thesis she was forced to admit because of the contradiction she was led to, nor the premisses that she was lured to accept in order to arrive at the contradiction, nor the belief that they actually do yield this contradiction are things she actually needs to take home with her. The important thing regarding validity is something different. It is that, for the games to be making any sense, there must be a preliminary agreement between the players that the eventuality of a win by the Answerer is in principle possible. This can mean nothing other than that both players

recognize the reality of an *apparatus* that is not open to their manipulation, and that can force them to endorse beliefs *they do not want to endorse*, either in the context of a specific game, or in life in general.

Conclusion

There are things such that, if they are true, others follow by necessity, and there is a possible debate in which Questioner and Answerer agree on some things being true, because they just feel like it, and they agree on other things following from them, because the one (i.e., the Questioner) wants to and the other (i.e., the Answerer) is forced to. This is the only reason why the Answerer enters a dialectical debate. She hopes that she will bring about a condition of this sort. The reason that the Answerer is a real sportsman and not a bore insofar as she enters the debate is that she thinks that it is theoretically possible that she will stumble upon a condition of this sort and lose the game. She will do her best in order to avoid it, but she must be believing that this is not theoretically excluded.

Let us conclude: it is incoherent for one to enter any dialectical debate without having conceded that there is such a thing as validity. So, on the one hand, it might be the case that in any dialectical debate over any thesis p, no debater is in principle involved in any genuine inquiry on the truth-value of p. At the same time, it is also the case that by entering the debate both debaters are *eo ipso* committing themselves to validity; that is, they must be both agreeing that there are sets of sentences, such that, if they are true, other sentences do follow by necessity. And this is an important and philosophically serious commitment. Quite crucially, this remains a commitment even in case they are ready to mislead their opponents; even if they are "sophists."

Appendix

1. **Structure G** Is the Quintuple <D, S, M, P, c>

D is the set of declarative sentences, S the set of general ways of reasoning, M is the set of metatheories over the elements of S, P is a pair of idealized players, and c a choice function over D. Sentences in **D** can belong to any natural language, and, in any case, they need to belong to some interpreted language.

Each element of **S** is a set of ordered triplets, such that: the first element is a set (possibly empty) of elements of D, the second element is a possibly empty ordered set of elements of D, and the third is a singleton of D. Intuitively, the first element is made of "premisses," the third element is a "conclusion," and the ordered set (second in order element of the triplet), represents the intermediary steps from "premisses" to "conclusion."

Rule: Suppose that **t** is a triplet of this sort. Then, so is any triplet made by (1) the same premisses, (2) any initial segment of the intermediary steps of **t**, without its last element, and (3) the last element of this segment as conclusion. The

elements of S represent all "general ways of reasoning."[12] The arguments in S are all arguments of all general ways of reasoning.

The Elements of **M**, called "foundations," are pre-theoretical general arguments on why an element of S, that is, a general way of reasoning, is valid or not; "valid way of reasoning" meaning here a way of reasoning such that it contains but valid arguments, and "valid arguments" be arguments such that, if the premisses are true, the conclusion cannot but be true.[13] So, if x∈S, then m is a metatheory on x insofar as it argues in favor of the thesis that x, that is, a way of reasoning, is valid, or does not do so. It does not need to argue in favor of the thesis that x is a valid way of reasoning or in favor of the thesis that it is invalid. It can also argue to the effect that this question is undecidable. Similarly, if y∈x∈S, n is metatheoretical argument on y insofar as it argues that y, that is, an argument belonging to a way of reasoning, is valid or invalid. Similarly, it does not need to argue in favor of the thesis that y is a valid argument or in favor of the thesis that it is an invalid argument. It can also argue to the effect that the question is undecidable.

The elements of **P** are constants, that is, the "Questioner" (**Q**) and the "Answerer" (**A**), such that they react, according to some rules, to an initial assignment of an element of D to the Answerer. The full record of their reactions following such an assignment is called a "game."

c is the choice function that initially assigns an element of D to the Answerer.

2. How the Claim that There Is No Such Thing as Validity Can Be Represented in G

A person who believes that there is no such thing as validity, must also be also upholding the view that there is no pair of premisses/conclusion in S, such that, if the premisses are true, the conclusion cannot but be true. The same person must also be maintaining that, for every validity claim of S she is presented with, there are effective means for her to refute it. This, as for G, means that, for every element of every element of S, she can effectively refute the claim that the conclusion "follows from the premisses by necessity." It also implies that, for the same person, there is always enough ammunition in M to argue both against the validity of any specific argument and against the reliability of any general way of reasoning, as represented in S. For consider it in this way. If there is no general valid way of reasoning in S, all elements of S must be flawed in some way or other. Now, since the elements of M represent all metatheories over the elements of S, it follows that, for every general way of reasoning as represented in S, the denier of validity can call a metatheory that effectively argues against it. In addition, and for every particular argument that belongs to an element of S, the denier of validity can call a metatheoretical argument from some element of M that effectively undermines it. Never mind about metatheoretical arguments being essentially arguments too. They are not represented in S. Now, crucially, this does not turn G into an ad hoc and basically inconsistent artifact that has been put to work just for the purposes of the present paper. Notice here that there is nothing inconsistent in the idea that (1) no one can present

one with an argument to the effect that, if some sentences are true, some other sentence must be true, and (2) there is in principle an effective way to argue in favor of the general absence of an argument of this sort. This is because the argument to the effect that there is no argument of a specific sort (i.e., of the sort that, if the premisses are true, the conclusion must be true), can be of a different sort from the latter, and this is exactly the reason why such arguments are not represented in S. In order to better see this, let us consider the following pair of games. In game (1), the Answerer is assigned with thesis p and, so, the Questioner needs to establish not-p. At some point of the game, it is put to the Answerer that, from the set of premisses P that has been accepted by her already, not-p follows by necessity. Let us suppose that the Answerer successfully rebukes that claim by an argument in M. In game (2), the same Answerer defends the following claim: non-p follows by necessity from P. Thereby, the Questioner now needs to establish that not-p does not follow by necessity from P, that is, what she needed to argue against in (1). At some stage of (2), it is put to the Answerer that that non-T does not follow by necessity from P follows by necessity from a set of premisses P*, already accepted by her. Again, the Answerer consistently rebukes that claim by some argument in M. This is not an inconsistent narrative. This is because, in both (1) and (2), the Answerer does not challenge the view that some conclusion is true, or that the same conclusion does emerge in some way or other; she just rebukes the claim that it follows by necessity from a specific set of premisses.[14]

3. The Game

3.1. Setting and Rules

c assigns p to A. Automatically, not-p is assigned to Q. By "U(A)" we denote the universe of beliefs of the Answerer. The universe of beliefs of the Questioner is U(Q) and is constant throughout the game. It is equal to {not-p}. The game has a predetermined number of stages, 1, 2, 3,…, n.[15] U(A) is augmented in each one of these as follows: If, at stage m, U(A) is B (U(A, m)=B) and the Questioner asks "q?" at that stage, then, (1) if the Answerer replies by YES, U(A) at stage m+1 becomes B∪q, (2) if she replies by NO, U(A) at stage m+1 becomes B∪not-p.

Questions by Q fall in two general categories and there are no others.

1. There are naked questions. To such questions, A is allowed to answer as she pleases.
2. There are *sequitur* questions. A sequitur question (also called a "claim") is such that, if at stage n, U(A) is X, and the Questioner asks the *sequitur* "q?" she is actually asking the Answerer whether she agrees that q follows by necessity from X.

Unlike what happens with naked questions, for *sequitur* questions, and if the Answerer wishes to reply by NO, she has to challenge the suggestion that q follows by necessity from her universe of beliefs. In other words, she needs to argue to the effect

that no matter whether she is compelled to believe in every single proposition of her universe of beliefs, it is not the case that she is thereby compelled to believe in q as well.

The Questioner wins, if she manages to put not-p in the universe of beliefs of the Answerer within the predetermined number of stages. The Answerer wins, if the Questioner fails to do so.[16]

3.2. Optimal Strategies for the Two Players

As soon as p is assigned to A, the Questioner needs to restrict her focus down to elements of S that contain arguments with not-p as conclusion. Intuitively, she needs to adopt and employ "ways of reasoning" that can eventually lead her opponent to not-p. For that purpose, she needs to charge the universe of beliefs of the Answerer by the premisses of at least one such argument. She can renew the attempt by as many different arguments and different ways of reasoning as she pleases, but only up until the final stage. (For arguments with intermediary steps, a single argument is concatenated in a series of arguments in obvious ways. See Rule at the beginning.)

For the Answerer, there are two, non-exclusive, lines of defense:

1. She can try staying away from the premisses of any argument that has not-p as conclusion.
2. She can try challenging the truth of the *sequitur* claims involved in the same arguments.

Notice that (1) above is in principle superfluous for Answerers who believe that there is no such thing as validity, for any such player must believe that there is a satisfactory defense for all *sequitur* claims. So, she feels confident enough in entering any game whatsoever. For any argument, she believes that there is an effective way to argue against it. For the same reason, she needs to systematically refrain from entering any game as Questioner against opponents she considers to be as skillful as she is.

3.3. The X-Factor or λόγος

Before drawing some final conclusions regarding real-life games, let us ponder a little bit longer upon the idealized version of the game and what it implies for participants who believe that there is no such thing as validity.

First, we sketch in some more detail our conclusions so far. Suppose that players A and B are ideal players, in the following sense of "ideal": They share in common the exact same substructures D, S, and M, and their G structure is the ideal G structure over a language D. So, (1) they are familiar with the same set of the declarative sentences of an interpreted language; this concerns D. (2) They are aware of all "valid arguments" according to a maximal number of "ways of reasoning" regarding claims expressed in D; this is about S. (3) They are aware of all metatheories over the elements of S; this concerns M. Add to this that they both know these facts about one another.

Claim: A and B should systematically avoid entering the game as Questioners and blindly accept the role of the Answerer. This is the only rational decision from their

behalf. As Answerers, there is always a winning strategy. As Questioners, they can never win against an Answerer as skillful as them.

As for the quintuple, G, this means that, if the elements of P represent all games that are won by the Questioner in some possible debate, an ideal Answerer like the above can employ M to avoid this from happening in any game she takes part in.

Basically, there is no "game" here; at least no more that there is room for the game tic-tac-toe in the life of an adult. More generally, for ideal players, there is no sense in entering this game, unless they believe in validity, that is, in the presence of pairs of premisses and conclusions, such that, if the premisses are true, the conclusion cannot but be true. As previously said, and in order to avoid anachronisms, we have refrained from inquiring into the assumed reasons behind this conditional necessity that would have compelled Answerers to allow in their universes of beliefs things they do not wish to allow. For lack of a better (modern) term, let us call this X-factor, λόγος.

What preceded was about ideal competitors. What about non-ideal competitors like you and us? Well, for such players, and in the case that, they too, believe there being no such thing as validity, the "game" can be making sense in several ways: (1) Mental gymnastics. (2) An opportunity to show how superior they are in comparison with their opponent. (3) A pastime. There might be other reasons too. In any event, all these ways do involve an amount of intellectual charade.[17] If A and B both agree in there being no such thing as validity, the motivation behind their entering the game must be the imperfect status of their argumentative fitness. That is, "Although, I fundamentally believe that there is in principle no occasion, where you should accept by λόγος any conclusion, I might trap you in doing so at some point, exactly because you are not as skilled as your idealized counterpart." This is the motivation for the Questioner. "Although, I fundamentally believe that there is in principle no occasion, where I should accept by λόγος any conclusion, you might trap me into doing so, because I am not as skilled as my idealized counterpart." This is the motivation for the Answerer.

On the other hand, if they believe that there is such a thing as "following by necessity"—as Aristotle insists there is both in the *Prior Analytics* and in the *Topics*—the game is neither tic-tac-toe, nor charade. The above does not remove any of the indifference the players experience regarding both the "real" truth-value of the sentences they occasionally espouse within the game and the validity of the arguments they occasionally suggest to one another. Regarding these, they can and must be occasionally hypocritical, mischievous, ruthless, and all they want in order to win.[18]

Let us finally reiterate Brunschwig's slogan, *there is no serious concern for truth* in these games. Nonetheless, no one can seriously enter these contests, unless she believes that there is such a thing as validity. And even if she does not, she must at least pretend that she does prior to and during the game. Entering the game presupposes a tacit, even if false, contextual and temporary, consent to validity. This is not the pinnacle of scientific optimism or trustworthiness. But, since the existence of such a thing as "validity" is the precondition for these games to be making any sense, it is not quite far from this pinnacle either.

Notes

1. Ross (1995: 57; our emphasis).
2. See also *Sophistical Refutations*, 167b21-36.
3. For a few exceptions to this majority report, see, for example, Berti (2005); Bolton (1990, 2017).
4. Brunschwig (1967: vii).
5. See the Appendix at the end.
6. Here, and in other similar contexts, "formal" refers to the game rules, that is, it means: not about truth or falsity but part of the formal rules of the game. Not to be confused with "formal" as in "formal logic."
7. See Evans (1977 and 1975: 42–52), and more recently Hasper (2013: 13–54).
8. For a more formal account of Sections 10.3 and 10.4, see the Appendix.
9. An Answerer might prefer, at times, answering "Yes" to c(p) sequitur questions, even if p makes part of her universe of beliefs, and be defeated, rather than losing face in front of the audience.
10. According to other interpretations of these games, a random contradiction would do as well, that is, not specifically the one regarding the thesis under discussion. Nothing hangs on this as for our purposes.
11. q can be the contradictory of the Answerer's thesis, but this is not necessary. It might also be a premisses preparing the ground for that.
12. In order to avoid anachronisms, but also because of the (partly) informal nature of dialectical debates, we have opted for the phrase "general ways of reasoning" instead of more ideologically loaded ones, like "logical systems," "deductive theories," and so on. Besides, D is a purely extensional substructure of G. This implies that, in G, each such "general way of reasoning" is identical to the set of all arguments that are valid according to the same way of reasoning, and so we do not need to scrutinize at this point over what exactly makes them such.
13. "cannot but be true" is broad enough so as to allow several further specifications as for where this impossibility lays upon, like "the conclusion follows by logic," "the conclusion follows *a priori*," and so on. Besides, and in the context of the dialectical game, it is of no importance what the specific reason behind the impossibility of the premisses being true and the conclusion being false might be. If the Answerer concedes, for whatever reason, that this cannot be the case, and if she has already accepted the premisses, she needs to accept the conclusion too.
14. Compare this to logicians who argue in favor of the thesis that there is no such thing as a "formal proof." Evidently, and consistently they try to "show" this not by means of a formal proof.
15. In reality, it has a predetermined duration, in which the Questioner is allowed to squeeze in as many stages as she can, but this makes no formal difference for the account.
16. Presumably, there are some rules for the referee and the objections that can be put to her, but we skip over these here.
17. *Pace* perhaps the so-called peirastic version.
18. Evaluate this with a grain sault. *Topics*, 8, esp. 4–10, provides evidence that "winning no matter what" is not always appreciated by the community, and that losing in (argumentative) style can be preferable than being an obnoxious bad sport.

Bibliography

Bolton, R. 1990, "The Epistemological Basis of Aristotelian Dialectic," in D. Devereux and P. Pellegrin (eds.), *Biologie, logique et métaphysique chez Aristote*, 185–236, Paris: Editions du CNRS.

Berti, E. 1997, "Philosophie, dialectique et sophistique dans Métaphysique 2," *Revue Internationale de Philosophie* 51: 379–96.

Berti, E. 2005, "Aristotelian Endoxa as a Basis for a Modern Reasonableness," in R. Dottori (ed.), *Reason and Reasonableness*, 177–90, Münster: LIT Verlag.

Brunschwig, J. 1967, *Aristote, Topiques*. Tome I, Livres I–IV, Paris: Les Belles Lettres.

Brunschwig, J. 1984/5, "Aristotle on Arguments without Winners or Losers," in *Wissenschaftskolleg Jahrbuch*, 31–40, Berlin: Siedler Verlag.

Evans, J. D. 1977, *Aristotle's Concept of Dialectic*, Cambridge: Cambridge University Press.

Evans, J. D. 1975, "The Codification of False Refutations in Aristotle's *De sophisticis elenchis*," *Proceedings of the Cambridge Philological Society*, 21: 42–52.

Hasper, P. 2013, "Aristotle: Sophistical Refutations," in P. S. Hasper and C. Rapp (eds.), *Fallacious Arguments in Ancient Philosophy*, 13–54, Münster: mentis-Verlag, .

Rapp, Chr. 2018, "Aporia and Dialectical Method in Aristotle," in G. Karamanolis and V. Politis (eds.), *The Aporetic Tradition in Ancient Philosophy*, Cambridge: Cambridge University Press.

Ross, D. 1996, *Aristotle*, London: Routledge.