Philosophical Review

THE ONCE AND FUTURE SEA FIGHT: ARISTOTLE'S DISCUSSION OF FUTURE CONTINGENTS IN *DE INTERPRETATIONE* IX

"It will not happen for hundreds of years, but both of us will come back. Do you know what is going to be written on your tombstone? *Hic jacet Arthurus Rex quandam Rexque futurus.* It means, the once and future king."—T. H. White, *The Once and Future King*, Book II, Section 10.

ARISTOTLE'S PROBLEM IS PROBLEMATIC

THE MOST important problem raised by Aristotle's discussion of singular statements concerning the future in *De Interpretatione* ix is the question: what is the discussion all about? Scholars disagree not only about the details of Aristotle's discussion; they have given different answers to the question: what is Aristotle's problem in *De Interpretatione* ix?[1] What is the view he wants to refute there, and what is the view for which he wants to argue?

I do not propose to review here the whole spectrum of answers that have in fact been given to these questions. I think we can answer the questions just posed with a fair amount of confidence by considering what Artistotle says in *De Interpretatione* ix against the background of certain other doctrines and usages of his— a source of information rarely resorted to in recent discussion. Furthermore, I think that the main point of Aristotle's discussion has been missed by all the recent commentators. In order to throw my interpretation into sharper relief, I shall nevertheless contrast

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[1] Some recent literature bearing on the subject of this paper is listed in an appended bibliography. A sense of the variety of answers to the question concerning Aristotle's problem is perhaps evoked by a comparison of Abelard's and Miss Anscombe's discussions with the others. References not otherwise specified are to works listed in the bibliography.

it with certain prevalent views of the nature of Aristotle's discussion.

THE TRADITIONAL INTERPRETATION

The type of view I mainly want to criticize may be expressed by saying that in *De Interpretatione* ix Aristotle denied the applicability of the law of excluded middle to statements concerning individual future events.[2] According to this view, which I shall call the traditional interpretation, Aristotle argues that the sentence

(1) p or not-p

may fail to be true when p deals with a particular future event. In order to bring this interpretation into line with Aristotle's own formulations, which lean heavily on such modal expressions as ἀναγκαῖον,[3] the defenders of the traditional interpretation will presumably have to say that he was discussing

(2) necessarily (p or not-p)

as much as he was discussing (1). In any case, he was discussing either the truth or the necessity (or both) of the whole disjunction (1). According to the traditional view, he was not discussing the necessity or nonnecessity of the two disjuncts.

How Aristotle's alleged rejection of the law of excluded middle in *De Interpretatione* ix is supposed to square with his impassioned defense of the law in *Metaphysics* IV, 4 has never been spelled out in satisfactory detail.

What, then, on the traditional view, is the difficulty about (1) or (2) that worried Aristotle? It must have been what might be

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[2] Some writers—e.g., Łukasiewicz and Mrs. Kneale—distinguish between the law of excluded middle (every sentence of the form "p or not-p" is true) and the principle of bivalence (every sentence is true or false). A few, including Mrs. Kneale and Colin Strang, think that Aristotle is striving to make this very distinction in *De Int.* ix. Whatever the merits of the distinction are in the abstract, I cannot find it in Aristotle's text. My main reason for thinking that the distinction is not Aristotle's is given on pp. 478 ff. In the bulk of this paper, I shall simply ignore it.

[3] See, e.g., *De Int.* ix, 19a28, 31, b1.

called the *problem of future truth*. Assume, for the sake of argument, that (1) or (2) is true universally. Then it will be the case, as Aristotle says, that if someone declares that a certain individual event will take place and someone else declares that it will not take place, one of them will clearly be making a true statement while the other will be making a false one; necessarily so, if (2) is universally true. For instance, it will either be true to say that a sea fight will take place tomorrow or else true to say that it will not take place tomorrow. Suppose, for the sake of argument, that the former alternative happens to obtain. Then it is true (*already* true) that there will be a sea fight tomorrow. But if this is already true today, how can the occurrence of tomorrow's sea fight be contingent? If it is already true that there will be a sea fight tomorrow, the sea fight cannot conceivably fail to come about. By the same token, if it will not take place, then it will be false today to say that it will be fought; and this seems to make it impossible for it to take place. Hence the unrestricted applicability of *tertium non datur* to statements about future events seems to commit us to holding that all future events are predetermined, and thus to lead us to determinism.

This is what I dub the problem of future truth. It has been charmingly described by Gilbert Ryle in his Tarner Lectures.[4] If this problem is what occupies Aristotle in *De Interpretatione* ix, it is indeed plausible to hold that his solution of the problem consists in giving up the assumption that every statement about the future must be true or false. I suspect that a preoccupation with the problem of future truth has colored recent discussion on Aristotle and has made the hold of the traditional interpretation very difficult to break. It seems to me, nevertheless, that the problem of future truth is for Aristotle at most a subordinate one, and that there is a great deal more to his discussion in *De Interpretatione* ix than this problem, if it is a problem.

Aristotle's Ways with Time and Truth

Some of the flaws of the traditional interpretation will be discussed later (mainly on pages 478 ff.). Here I shall merely

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[4] Gilbert Ryle, *Dilemmas*, ch. 2.

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contrast it with an interpretation of the objectives of Aristotle's discussion which seems to me to come much closer to the truth. In order to explain it, it is useful to recall some pertinent facts about the way Aristotle handles the notion of truth. I cannot recount all the evidence here; let it suffice to indicate the most relevant conclusions.⁵ One of the most striking features of the Aristotelian concept of truth is that it is not applied in the first place to what we should call propositions. Nor is it usually applied by Aristotle to the kind of sentences to which some modern philosophers and logicians would like the concept of truth to apply primarily, namely, to sentences whose contents are independent of the occasions on which they are uttered.⁶ When Aristotle is thinking of sentences that serve to express our knowledge or our opinions, he is typically, and indeed almost exclusively, thinking of sentences that are token-reflexive, in that they contain an explicit or implicit reference to the moment of time at which they are uttered—of sentences which, in other words, contain implicitly or explicitly the word "now." Aristotle's examples are likely to be of the type "Socrates is now sleeping" rather than "Socrates is (was, will be) sleeping at such and such a time on such and such a day." As far as sentences which deal

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⁵ Some remarks on the subject are made in my paper, "*Huomioita kreikkalaisten ajankäsityksestä.*" The main point is also made by Mrs. Kneale (see Kneale and Kneale, pp. 48-51) who points out that Aristotle's argument in *De Int.* ix turns on the assumption that the truth value of a sentence may change. Mrs. Kneale does not point out, however, that this assumption permeates Aristotle's whole way of thinking about statements, truth, and time. Hence it would be historically unsatisfactory to dismiss this assumption as a simple mistake, as Mrs. Kneale in effect does, even if it were necessarily mistaken. The fact is, however, that Aristotle's way of thinking about the truth of sentences in their relation to time is *per se* no more fallacious than ours. It necessitates certain adjustments in the other semantical notions, and it is likely to be much clumsier than the preferred modern way of treating the same problems, but it is not bound to lead one to any absurdities. Thus it seems to me that Mrs. Kneale does not follow the interesting lead she puts forward far enough to throw as much new light on Aristotle's argument as she might have done.

⁶ Such sentences are called *standing sentences* by W. V. O. Quine, in *Word and Object* (New York and London, 1960), pp. 35-36, as distinguished from *occasion sentences.* For the modern logicians' preference of them, see Prior, *Time and Modality*, Appendix A.

with individual events are concerned, there are in the whole Aristotelian corpus no instances of sentences whose contents are tied to some objective chronology and are thus independent of the moment of their utterance. From this it follows that the sentences with which Aristotle is normally dealing may change their truth value.[7] Since Aristotle's criteria for the identity of thoughts expressed by different utterances largely parallel his criteria for the sentences thereby uttered, the same will hold for thoughts (or, as Aristotle puts it, for opinions).[8] The form of words "Socrates is (now) sleeping" will for him express the same opinion when uttered tonight and when uttered tomorrow afternoon. And if so, then frequently one and the same sentence (λόγος) and one and the same opinion (δόξα) will of course be sometimes true and sometimes false.

NECESSITY AND TIME IN ARISTOTLE

If this is the way Aristotle normally thinks of our vehicles of linguistic communication, it is likely that he has the same paradigms in mind when he defines or characterizes his fundamental logical and philosophical notions. An important case in point is what he says of the notions of necessity and possibility. In passage after passage, he explicitly or tacitly equates possibility with sometime truth and necessity with omnitemporal truth.[9] Given enough Aristotelian assumptions, this is a very natural identification. But it is bound to land him into trouble as soon as he begins to consider sentences of type

$$(3) \quad p \text{ at time } t_0,$$

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[7] See *Categoriae* v, 3a34-b2, 4a23-30. Whatever doubts there may be concerning the authenticity of the *Categories* do not affect my point, for similar statements are found elsewhere in Aristotle's writings, e.g., at *Metaphysics* IX, 10, 1051b13 ff.

[8] *Categoriae* v, *loc. cit.*

[9] Perhaps the most explicit passage is *Met.* IX, 3, 1047a10-14. An instructive passage in which Aristotle explains the "proper" sense of "indestructible" along these lines is found in *De Caelo* I, 12, 282a27 ff. Further evidence for this connection in Aristotle between time and possibility is found in my papers, "Necessity, Universality, and Time in Aristotle" and "Aristotle and the 'Master Argument' of Diodorus" (see the bibliography).

where t_0 is specified independently of the moment of utterance of the sentence in question, in addition to sentences of type

$$(4) \quad p \text{ now}$$

or simply p, where "now" is tacitly included. (Notice that such sentences as "p tomorrow" or "p yesterday" go with (4) in that they contain a reference to the present moment.) Aristotle's troubles are increased by the fact that he neither clearly realized how closely he was committed in his conceptual system to considering (4) rather than (3) as a paradigm of an informative sentence nor fully realized what alternatives were open to him. I want to suggest that in *De Interpretatione* ix the difficulties broke to the surface.

The way in which the difficulties arise is obvious enough. Take any sentence about an individual event that is tied to an objective time scale (chronology)—that is, a sentence of type (3). If this sentence is true once, it is true always. If necessity equals omnitemporal truth, this means that (3) will be necessarily true if true at all; and by the same token it will be impossible if false. Hence all statements about events that are individual in the sense of being tied to a particular moment of time will be either necessarily true or necessarily false. Everything that happens thus apparently happens necessarily, and we seem to end up in a complete determinism.

It will perhaps be objected that the main verb of the statement p must be in some tense or another. In whichever tense it is, the objection continues, it cannot be the right form of words throughout the infinity of past *and future* time. We must say "Napoleon was defeated by the Russians in 1812," not that he is or will be defeated, whereas a contemporary may have asserted the same thing in the present or future tense. Some of the schoolmen later stressed this point.[10] It would not, however, help Aristotle very much. There will in any case be a statement in the future tense that has remained true for an infinity of past time. And Aristotle believed firmly that whatever has remained unchanged for an

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[10] See Boehner, esp. pp. 57-58. It is not obvious, however, whether this point was meant as a solution of Aristotle's difficulty.

infinity of past time cannot ever be changed.[11] Thus the statement "Napoleon will be defeated by the Russians in 1812" would have been true to make at any previous moment of time, and hence what it expresses cannot possibly be otherwise than it is.

If we realize how deeply ingrained Aristotle's habit of thinking in terms of temporally indefinite sentences of type (4) must have been, we also realize that he had a perfectly genuine problem about predictions concerning particular future events different from the problem of future truth. It is likely that the latter also worried him; but in the main his motives seem to have been different. Aristotle's main problem was not a metaphysician's vague worry about whether present truth about the future prejudges future events; it was the difficulty of a systematist who had defined his notions for too narrow a range of cases and was then forced to accommodate awkward new cases in his framework.

On this interpretation, Aristotle's problem was not primarily due to the apparent difficulties involved in the application of *tertium non datur* to statements about future events. It was generated rather by the fact that statements about individual future events have *always* been true if they are true at all, and *always* false if false at all. Statements of this kind were thought of by Aristotle as being true or false *necessarily*. Aristotle's problem is thus primarily that of *omnitemporal* truth—or, more accurately, that of *infinite past* truth—rather than that of *future* truth.

THE STRUCTURE OF ARISTOTLE'S ARGUMENT

This, in any case, is what we are made to expect on general grounds by Aristotle's ways with time and truth. The first task for the rest of the paper is to show that the problem I have ascribed

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[11] See, e.g., *De Caelo* I, 12, 282a30 ff. and 283b17 ff. Aristotle might here seem to discuss only the possible existence of individuals, not their possibly having this or that property. The arguments he gives are applicable to both cases, however, and Aristotle himself stresses their generality. Hence this is one more instance of Aristotle's use of the word "being" as a shorthand expression which covers both existence and being such and such—i.e., having attributes.

to Aristotle is really found in the text of *De Interpretatione* ix. Some piecemeal evidence against the traditional interpretation, and for my own, will be offered later (pages 478 ff.). In order to deduce this interpretation from the text we have to do something more, however, than discuss individual passages. We have to consider the structure of Aristotle's argument in *De Interpretatione* ix.

What is the typical strategy of an Aristotelian argument? Often the difficulty of understanding his remarks is not due to their complexity, but to the fact that he is proceeding dialectically. He presents arguments and well-founded opinions first for one side and then for the other. The clash between the two gives rise to an *aporia* to be solved. Aristotle's own position is normally achieved by a conceptual analysis of the arguments which gave rise to the *aporia*. Very often it is achieved by pointing out distinctions between the different senses of some word or phrase figuring in the arguments. In reaching his own position, Aristotle is normally trying to preserve as much as possible of the apparently contradictory arguments he has explained, provided they "pass the appropriate scrutiny."[12] As pointed out by G. E. L. Owen, ἔνδοξα or well-founded opinions were for Aristotle among the "phenomena" to be "saved" by his own solution.

This simple scheme seems to apply very well to *De Interpretatione* ix. Even if we do not yet understand the substance of what Aristotle says there, the main parts of his discussion stand out clearly enough. First, Aristotle presents the case for the deterministic view (18a34-18b16). Then he points out the obvious impossibilities implied by the deterministic view (19a7-22). His own solution is expounded from 19a23 on. From the form of words Aristotle uses here, it appears that the solution turns on a distinction between the meanings of two closely related expressions.

The transition from the argument for the deterministic view to the statement of the case against it is effected by an elaboration

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[12] See G. E. L. Owen, "τιθέναι τὰ φαινόμενα," in *Aristote et les problèmes de méthode*, in the series *Aristote, traductions et études* (Louvain, 1961), pp. 83-103, esp. pp. 84-92. I am much indebted to Owen's essay here. Cf. also Benedict Einarson, "On Certain Mathematical Terms in Aristotle's Logic I," *American Journal of Philology*, LVII (1936), 33-54, esp. 38.

of the consequences of the deterministic standpoint (18b26-19a6). In a parenthetical passage (18b17-25) Aristotle rules out an alternative solution to his problem.

So far, the structure of Aristotle's argument is clear enough.[13] However, appreciating this structure does not yet throw much light on his solution.

In order to understand Aristotle's solution we must turn to 19a23-b4. Here we find, it seems to me, the most important peculiarities of the present argument of Aristotle's. The *dénouement* clearly comes at 19a23-27, a passage which will be analyzed in detail below. As usual, Aristotle hastens to point out how his solution does justice both to the arguments for the deterministic position and to the arguments against it. As usual, he says in effect that in one sense one party is right and in another sense the other is also right. What distinguishes the present passage from many others in Aristotle is that here he makes the same points three times, merely addressing himself to a slightly different version of the problem each time. First, he states what is true and what is false in the deterministic arguments as far as they concern *an individual future event* (19a23-27). Then he repeats the same points as applied to *a pair of contradictory future events* (19a27-32). Finally he goes through the same motions all over again as applied to *a pair of contradictory statements* about an individual future event (19a32-19b4). These three parts of Aristotle's exposition of his own solution will be referred to in what follows as stages I-III of his solution.

The transitions from each of these stages to the next one are conspicuous in the text. In each case Aristotle makes it clear that he is merely going to reformulate a point he has already made. "And the same account holds for contradictories also" (19a27-28; transition from stage I to stage II).[14] "So, since statements are true according to how the actual things are, it is clear that wherever these are such as to allow of contraries as chance has it, the same necessarily holds for the contradictories also" (19a

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[13] So far, my analysis of Aristotle's argument coincides mainly with Colin Strang's; see his "Aristotle and the Sea Battle."

[14] In quoting *De Interpretatione* we use the excellent new translation by J. L. Ackrill, with a couple of small changes.

OUTLINE OF ARISTOTLE'S SOLUTION

O	I
The facts of the case are presented.	The main distinction is made in terms of an individual future event.

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0. For we see that . . . in things that are not always actual there is the possibility of being and of not being.

1. But if it was always true to say (of what now is) that it was so, or would be so, it could not not be so, or not be going to be so. But if something cannot not happen, . . . it is necessary for it to happen.

1. What is necessarily is, when it is; and what is not necessarily is not, when it is not.

2. (Nevertheless) not everything is or happens of necessity: some things happen as chance has it.

2. But not everything that is necessarily is; and not everything that is not necessarily is not.

3. For to say that everything that is is of necessity, when it is, is not the same as saying unconditionally that it is of necessity.

4. (Then) of the affirmation and the negation neither is truer than the other; with other things one is truer and happens as a rule, but still it is possible for the other to happen instead.

II	III
The same distinction is made in terms of contradictory events.	The distinction is applied to the corresponding statements.

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0. And the same account holds for contradictories.	0. This happens with things that are not always so or are not always not so.
1. Everything necessarily is or is not, and will be or will not be.	1. With these it is necessary for one or the other of the contradictories to be true or false.
2. But one cannot divide and say that one or the other is necessarily.	2. Not, however, this one or that one, but as chance has it.
	4. Or for one to be truer than the other, yet not already true or false.

32-35; transition from II to III). It is also conspicuous that the notions of truth and falsity ($\dot{a}\lambda\eta\theta\dot{\eta}s$ and $\psi\epsilon\upsilon\delta\dot{\eta}s$) re-enter the discussion at stage III after having been absent at I and II.[15]

A comparison among the three stages of Aristotle's solution may therefore be hoped to throw light on all of them. We may also bring in the preliminary arguments pro and con as the fourth member of the comparison. At each stage Aristotle states what is true and what is false in the deterministic viewpoint and sometimes also adds further comments on the relation between both. These remarks may be profitably compared with the initial arguments for and against determinism, which will be referred to collectively as the preparatory stage (stage O) of Aristotle's solution.

In order to facilitate a comparison among the four stages, some of the parallelisms between the key passages are brought out by the appended schematic outline of Aristotle's solution. The preparatory stage of Aristotle's solution is of course represented only by a few characteristic passages. The outline graphically shows the close parallelism which obtains between the different stages.

THE NATURE OF ARISTOTLE'S MAIN DISTINCTION

Before we can pause to examine the analogies that the outline brings out we must try to perceive the nature of Aristotle's solution. As we have seen, the crucial passage is 19a23-27, which figures in the outline as the second column. The key sentences are thus the following:

(I. 1) What is necessarily is, when it is; and what is not necessarily is not, when it is not.

(I. 2) But not everything that is necessarily is; and not everything that is not necessarily is not.

(I. 3) For to say that everything that is is of necessity, when it is, is not the same as saying unconditionally ($\dot{a}\pi\lambda\hat{\omega}s$) that it is of necessity.

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[15] The difference between stages I-II on one hand and stage III on the other has been pointed out many times. See, e.g., Ackrill, pp. 137-138, and Oesterle, p. 121 (St. Thomas Aquinas, commentary on *De Interpretatione*, pt. I, lesson 15, § 1).

In (I. 3) Aristotle introduces the distinction by means of which he proposes to solve his problem. This distinction is between saying on one hand that something is of necessity *when it is* and on the other hand that it is of necessity *haplōs*. What exactly is this distinction? What, first of all, is the force of the word *haplōs* in Aristotle? In its basic and normal sense it does not so much indicate the absence of conditions as the absence of qualifications. The translation "without qualifications," taken in the literal sense of the phrase, thus seems to catch the Aristotelian meaning of the word quite accurately.[16] For Aristotle, something is said *haplōs* if it is said *simpliciter*—that is, said without any additional qualifying word, phrase, or clause. The contrast Aristotle is here drawing is therefore between statements of the form

$$(5) \quad \text{necessarily } p$$

and certain statements that result from (5) by adding qualifications. Qualifications of what kind? Aristotle's formulations in (I. 1) and in (I. 3) ("*when* it is") shows that they are temporal qualifications. The contrast must therefore be between (5) and statements of the form

$$(6) \quad \text{necessarily } (p \text{ at time } t_0).$$

Statements of the form (6) are, it seems, said by Aristotle to be true whenever (3) is true, while statements of the form (5) are apparently considered false by him in many similar circumstances.

This might seem a rather strange doctrine, were it not exactly the same as the suggestion made above (pages 465 ff.) concerning the causes of Aristotle's difficulty. It was pointed out there that Aristotle's assumptions concerning the notions of necessity and possibility and their relation to time seem to have tempted him to declare true statements of type (3) necessary, whereas true statements of type (4) (or of the simpler type obtained by omitting "now") normally were not believed by him to be necessary. But saying this is exactly the same as saying

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[16] See *Topics* II, 4, 115b11 ff. and 29 ff., *De Soph. El.* v, 166b38 ff., and Bonitz, *Index Aristotelicus*, on *haplōs*. Cf. also the trenchant formulation by C.S. Lewis in *Studies in Words* (Cambridge, 1960), pp. 167-169. Ackrill, too, elsewhere translates *haplōs* by "without qualifications"; cf. *De Int.* xiii, 23a16.

that Aristotle was led to consider (6) true whenever (3) is true but to consider (5) in most cases false. The distinction Aristotle makes in (I. 3) is thus one that we are entitled to expect him to make by what we find elsewhere in his writings.

This way of reading the crucial sentence (I. 3) might nevertheless seem to involve several difficulties. A couple of them will be discussed later. There is, however, further support for our reading. One piece of evidence is the fact that in contexts comparable to the one we have here, *haplōs* is often used by Aristotle to indicate the absence of *temporal* qualifications that would limit the scope of a statement to some particular moment or interval of time. Thus we read at *Analytica Priora* I, 15, 34b7-11:

We must understand the expression "applies to all" not as qualified with respect to time (κατὰ χρόνον ὁρίσαντας) e.g. "now" or "at such-and-such a time" but without qualifications (ἁπλῶς). For it is by means of premises taken in this latter way that syllogisms are effected.

Similar contrasts occur elsewhere. For instance, at *De Interpretatione* i, 16a18 we have a contrast between ἁπλῶς and κατὰ χρόνον. Further evidence is found at *De Interpretatione* xiii, 23a16; *Analytica Priora* I, 10, 30b31-40 and I, 15, 34b17-18; *Topics* I, 5, 102a25-26; *De Anima* III, 10, 433b9; *De Part. Animalium* I, 1, 639b25; and *Metaphysics* V, 5, 1015b11-14.

WHAT DOES ARISTOTLE'S SOLUTION SOLVE?

Although we have thus succeeded in deducing from the text the interpretation which Aristotle's usage elsewhere had made us expect, our reading of the text still calls for several comments. For one thing, does the distinction Aristotle makes in (I. 3) help him at all? If my interpretation is right, the distinction looks much more like a restatement of Aristotle's problem than a solution to it. All true statements about genuinely individual future events still remain necessary; is this not as troublesome as any problem he may have had earlier?

The crucial passage (I. 3) is the first one in which the causes of his difficulty are made clear by Aristotle. He seems to have

thought that he could escape the worst merely by making the distinction between temporally unqualified sentences and sentences referring to a particular moment of time (which is specified independently of the moment of utterance of the sentence). This mere distinction does not, however, enable him to escape the deterministic conclusions he is worried about unless it is also assumed that it is the necessity or contingency of sentences of the former kind that really counts for the issue of determinism or indeterminism, not the necessity or contingency of sentences of the latter kind. In other words, Aristotle's proposed solution turns on the presupposition that it is the truth or falsity of statements like (5) that really counts here, not the truth or falsity of statements like (6).

Again, the interpretation we have found ourselves defending might prima facie seem quite implausible. For contemporary logicians, it is undoubtedly obvious that the necessity of individual events should be discussed in terms of statements of the form (6) rather than (5). A closer examination of the situation nevertheless suggests that this assumption may not have been equally obvious to Aristotle. It has already been pointed out that Aristotle habitually thought of logical matters in terms of temporally unqualified sentences of form (4) or (5) rather than in terms of temporally qualified sentences of form (3) or (6). Is it surprising, then, that he should have preferred, deliberately or unwittingly, to discuss the necessity of future events in terms of the former rather than of the latter?

Surprising or not, the fact that Aristotle does just this is betrayed by his formulations. It is well-nigh axiomatic for Aristotle that possibility equals sometime truth, or, as he puts it, whatever is not always actual is contingent. This assumption is set forward by him as the first general fact that shows the inadequacy of the deterministic position, as we can see from (O.o)—that is, from 19b8-11. It is thus one of the "facts of the case" to which any satisfactory solution has to conform. In (III. o), Aristotle accordingly returns to this requirement and points out that it is satisfied by his solution.

There are also further items of evidence for my interpretation. In another paper, I have discussed certain similarities and

dissimilarities between Aristotle and Diodorus Cronus.[17] One of
the main points that emerged from the discussion was that Aristotle
apparently escaped certain conclusions of the early Megarians
only by resorting to a notion of possibility on which a statement
that something is *now* possible really refers to all future times.
In order for p to be possible *now* it suffices that it *will be* true; and
in order for it to be impossible now it must *never* be true in the
future. As Aristotle illustrates his point, when an animal is said
to be indestructible *now*, what is really meant is that it is now an
animal which *will never* be destroyed.[18]

The details of this move were never completely articulated by
Aristotle, any more than the details of the move Aristotle makes
in (I. 3). It is obvious, however, that the two moves are parallel.
In order to avoid the collapse of possibility into actuality, which
the early Megarians had advocated, Aristotle had to say that
what really counts as showing what is possible at a moment is
not what is true of this one moment of time. In a sense, whatever
happens at a moment could not fail to happen at it; "possibly p
at t_0" implies "p at t_0." In Aristotle's view, this nevertheless does
not prove determinism, for what really counts as showing that
something is possible at a given moment of time is whatever
happens in similar circumstances at other (future) moments of
time. Such happenings Aristotle tended to discuss in terms of
temporally unqualified sentences of the type "p now" or "p
simpliciter." Hence the two moves amount essentially to the same;
in both cases, Aristotle tries to avoid deterministic conclusions
by shifting the focus of his attention from statements of type (3)
to temporally unqualified statements. In both cases, he seems to
think that this shift suffices to solve his problem. He does not
worry, we may say, about the implication "if (possibly p at t_0),
then (p at t_0)," because he either forgets or disparages the kinds
of sentences that occur as its antecedent and consequent.

This parallelism supports the interpretation advocated here.
The fact that, for us, Aristotle's move does not in either case
seem to remove the deterministic conclusions in a satisfactory

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[17] "Aristotle and the 'Master Argument' of Diodorus," especially section 11.
[18] Cf. *Top.* VI, 6, 145b27-30 and *De Caelo* I, 12, 282a27-30.

manner is no objection to my interpretation, although it may be an objection to Aristotle. For us, the extensionalistic account of possibility to which Aristotle resorts scarcely serves to clear up any questions as to what can or cannot happen at some particular moment of time. Given Aristotle's habits of thought, the situation might have seemed rather different to him.

One way of making Aristotle's view comprehensible, if not acceptable, to contemporary philosophers is to interpret him as thinking that it does not make much sense to speak of possibilities concerning a single moment of time. Statements of possibility were taken by Aristotle to be primarily statements of frequency, wherefore they involve a range of cases. Saying that an individual event is possible is for him normally an elliptical way of saying that the relative frequency of similar events on similar occasions is different from zero.

From this point of view, Aristotle's doctrine of possibility is analogous to his treatment of certain other notions. For instance, Aristotle does not think that there really is such a thing as a velocity or even a movement *at an instant*, except perhaps in some secondary sense.[19] Aristotle's "reply to Zeno rejects all uses of 'movement' other than that which can be described in terms of periods of time"; does he depart any more radically from common sense when he derogates those uses of "possibility" which cannot be described in terms of a variety of cases?[20] If Aristotle is "unable to speak of a speed at an instant," we should not be surprised to find him reluctant to speak of a possibility at an instant.

Be this as it may, it seems to me obvious that Aristotle's criticism of the position of the determinist does not consist in pointing out a fallacy in the latter's argument. It consists in a reinterpretation of the conclusion of the argument. This is as it should be; Aristotle's procedure here parallels his criticism of the Megarians. This observation effectively disposes of an acute objection which has been leveled against an interpretation of Aristotle's argument

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[19] See *Physics* IV, 14, 222b30-223a15; VI, 8, 239a23-b4.
[20] See G. E. L. Owen, "Zeno and the Mathematicians," *Proceedings of the Aristotelian Society*, LVIII (1957-1958), 199-222.

along the lines we are here following. It has been objected that on such an interpretation Aristotle neither rejects the determinist's premise nor exposes the fallacy of his argument.[21] We can now see that there is no need for him to do either. An exposé of a fallacy is not required by Aristotle's strategy, for a reinterpretation of the conclusion of an argument is an even better way of reconciling the argument with apparently contradictory doctrines than is the disclosure of a fallacy.

Some Uses of the Analogies

Further light on the details of Aristotle's discussion is thrown by the analogies which our outline of his solution brings out. For one thing, if our analysis of the structure of Aristotle's argument is right, the interpretation of Aristotle's discussion which has been defended by, among others, Colin Strang and Mrs. Kneale is seen to be mistaken.[22] According to their view, the point of Aristotle's discussion is to assert the truth of the disjunction (1) even when p is a sentence dealing with an individual future event but to deny that either p or not-p should therefore be true. Even if we disregard the intrinsic absurdity of this alleged doctrine of Aristotle's, which has provoked the deserved ridicule of Cicero (*De Fato* xvi, 37) and W.V.O. Quine, this interpretation is made implausible by the fact that initially Aristotle's key distinction has nothing to do with disjunctions. This distinction is made at stage I; and at this stage Aristotle is discussing an individual future event, not a pair of contradictory events nor yet any statements about them, whether in the form of disjunctions or not.

On our interpretation, we can see that a distinction similar to but different from the one just rejected ensues from Aristotle's basic distinction between (5) and (6). For many a temporally unqualified sentence p, neither p nor not-p is *always* true; hence neither of them is true necessarily, and the sentence

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[21] Cf. Ackrill, pp. 139-140.
[22] See note 2 and the works by Strang and by the Kneales listed in the bibliography.

(7)   (necessarily p)   or   (necessarily not-p)

is false. Nevertheless, for every p the sentence (1) is *always* true, and the sentence (2) therefore true. If Aristotle's views are formulated in terms of pairs of contradictories, he is thus on our interpretation discussing the necessity or nonnecessity of the individual disjuncts of (1), not the necessity or nonnecessity of the disjunction (1) itself. He has, however, to disentangle his problem from that concerning the truth of (2); and this is exactly what he does at stages II and III. The distinction he there makes is thus primarily between (2) and (7). In (II. 1) he considers the necessity of the disjunction, that is, considers (2); in (II. 2) he considers the necessity of the individual disjuncts separately (διελόντα), that is, considers (7). This is attested to by such passages as *Categoriae* x, 12b38-13a3, 13a9-13. It is true that in the *Categoriae* Aristotle uses the expression ἀφωρισμένως and not διελόντα, but this does not seem to make them less similar to (II. 2).[23]

These observations also help us to adjudicate the claims of the traditional interpretation, and of our own, to explain the details of Aristotle's text. According to these observations Aristotle is, on the traditional interpretation, denying (2) whereas, on our interpretation, he is denying (7). In order to see which of these he is actually doing, let us consider some of the relevant passages:

(*i*) In the opening sentence of *De Interpretatione* ix Aristotle says that

(8) "With regard to what is and what has been it is necessary for the affirmation or the negation to be true or false" (18a28-29).

This is soon contrasted with

(9)   "particulars that are going to be."

The contrast between "what is and what has been" on one hand and "what is going to be" on the other is of course the contrast between present and past on one hand and the future on the

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[23] Notice that the phrase ὁπότερ' ἔτυχε occurs both in the passages referred to in the *Categoriae* and in (O. 2) as well as in (III. 2).

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other. Aristotle is worried solely about (9). The case is different from what it is in (8); certain laws which hold for past and present events lead to difficulties when applied to (9) and will therefore eventually be rejected. These laws are formulated in (8). The formulation is not unambiguous, however, in that the law in question might either be of form (2) or of form (7). This is an instance of a difference between the two interpretations.

As Ackrill points out, reading (2) is prima facie more natural than (7) here. This is not decisive, however, for Ackrill admits himself that elsewhere (for example, at 17b27 and 18a10) Aristotle uses similar phrases to express (7). We have to resort to what Aristotle says elsewhere in order to find out what he means.

An indication is given by the fact that Aristotle more than once asserts that all true statements about the past are necessary (and that all false statements about the past are by the same token impossible).[24] In one passage he seems to say that the same holds for statements about the present.[25] Hence Aristotle undoubtedly believed that (7) holds for statements about the past. Rejecting it for statements about the future would amount to pointing out an interesting difference between the past and the future. This suggests, albeit not yet very strongly, that Aristotle probably had in mind (7) rather than (2).

(*ii*) Stronger evidence is forthcoming. Aristotle's discussion in *De Interpretatione* ix is symmetrical in the same way as a proposition in Euclid: he ends by repeating the main assertion he made in the introductory paragraph. Thus we read:

(10) "Clearly, then, it is not necessary that of every affirmation and opposite negation one should be true and the other false. For what holds for things that are does not hold for things that are not but may possibly be or not be; with these it is as we have said" (19a39-b4).

Because of the symmetry, the first sentence of this passage must mean the same as the initial denial for the law expressed in

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[24] *De Caelo* I, 12, 283b12-14, *Eth. Nic.* VI, 2, 1139b7-9. There is no trace of a suggestion that Aristotle is in these passages employing a sense of possibility different from his usual one.

[25] *Rhet.* III, 17, 1418a3-5.

(8). Prima facie, this sentence is ambiguous in the same way as the initial one. Here, however, the context offers a number of clues. On any interpretation, Aristotle is here summing up his own solution ("it is as we have said"). Now the body of the text does not contain any clear denial of the law of excluded middle. Our analysis of Aristotle's solution comes in handily here: a glance at (II. 2) or (III. 3) satisfies one that what is being denied as a part of Aristotle's solution is not (2) but (7). Furthermore, a comparison of (I. 1), (II. 1), and (III. 1) shows that (2) is consistently affirmed by Aristotle at all stages of his solution. The last time it is asserted is in the very statement immediately preceding (10). Hence there does not seem to be any room for doubting that in (10) Aristotle wants to deny (7) but not (2). Since his closing statement (10) is obviously intended to match the initial denial that "particulars that are going to be" are true or false of necessity, the same must hold for the latter, too.

This point is strengthened further by observing that the "things that are not but may possibly be or not be" which are mentioned in (10) are identical with the "things that are not always so or are not always not so" which are mentioned in (III. 0) and discussed in (III. 1)-(III. 4). This is shown by a comparison with *De Interpretatione* xiii, 22b36-23a20. What "holds for things that are" is, Aristotle informs us at 23a12-13, that some of them are changeless—that is, are always so or always not so. In contrast, "things that are not but may possibly be or not be" are all changeable—that is, neither always so nor always not so; compare also (O.0). Thus (III.2) is concerned with the very same things as (10) and is one of the likely references of Aristotle's phrase "as we have said" in (10). Since the former denies (7) but not (2), the same must be the case with the latter.

(*iii*) Our difficulties, however, are not over yet. It may seem to go against our interpretation that Aristotle classifies "universals taken universally" together with past and present events among the things for which (8) holds (see 18a29-31). The fact that he does so without apparently using any modal terms at all may seem even more alien to our interpretation. How can Aristotle state (7) without using the word "necessary" or any of its relatives?

What Aristotle actually says can be taken to mean that with universals "taken universally" (that is, in the normal sense) one of the contradictories is *always* true and the other *always* false. On the basis of the Aristotelian identification of necessity with omnitemporality this is just what interpretation (7) requires. In fact, the expressions ἀεί and ἀνάγκη seem to be on a par at 18a28-33. From Aristotle's statements elsewhere it also appears that he did think of unrestrictedly universal statements as being necessarily true if they are true at all.[26] Hence everything squares with our interpretation here.

(*iv*) It has sometimes been suggested that the point of Aristotle's discussion is that statements about future singulars are not yet true or false although they will later become true or false. This view is disproved by the fact that Aristotle explicitly includes statements concerning the future in his affirmations of (2). This is the case with (II. 1)—witness the words "everything . . . will be or will not be"—and it is also the case with an earlier passage which is as effective a counterexample to the traditional interpretation as one may wish:

Nor, however, can we say that neither is true—that it neither will be nor will not be so [18b 17-18].

The only hope of disqualifying this statement would be to allege that it does not represent Aristotle's final point of view. This allegation is shown to be invalid by our analysis of the structure of Aristotle's solution.

(*v*) Aristotle's fullest statement of his problem suggests very strongly that he is primarily worried about the fact that a true prediction must have remained true through an infinity of past time:

Again, if it is white now it was true to say earlier that it would be white; so that it was *always* (ἀεί) true to say of anything that has happened that

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[26] Cf. Hintikka, "Necessity, Universality, and Time in Aristotle," pp. 66-67. Notice also that for Aristotle a genuinely universal sentence refers to all the individuals existing at different moments of time (*An. Pr.* I, 15, 34b6 ff.) Hence if it is true once, it is true always, and therefore necessarily true according to the Aristotelian assumptions.

it would be so. But if it was *always* (ἀεί) true to say that it was so, or
would be so, it could not not be so, or not be going to be so. But if
something cannot not happen it is impossible for it not to happen;
and if it is impossible for something not to happen it is necessary for
it to happen [18b9-15; my italics].

A little later Aristotle writes:

Hence, if *in the whole of time* (ἐν ἅπαντι τῷ χρόνῳ) the state of things
was such that one or the other was true, it was necessary for this to
happen.... For... of what happens it was *always* (ἀεί) true to say that
it would be the case [19a1-6; my italics].

Again, we have a clear indication of what is on Aristotle's mind.
With these statements of Aristotle's problem—and with our
interpretation of his solution—one may compare Cicero's con-
clusion of his discussion of the same problem:

Reason itself will insist *both* that certain things are true from all eternity
and that they are not involved in a nexus of eternal causes but are free
from the necessity of fate [*De Fato* xvi, 38].

The way in which Aristotle reaches the passages which we
just quoted and in which he formulates his main difficulty
nevertheless shows that to some extent he is also worried about
the problem of future truth and not only the problem of infinite
past truth. In fact, starting from the assumption that *tertium non
datur* holds for all statements, Aristotle first derives a version
of the problem of future truth (see 18a34-b9). Only then does
he derive from the same assumption the formulation of the
problem of omnitemporal truth which we have quoted (see 18b9-
17). The fact that two different problems are initially considered
together by Aristotle has added to the difficulties of the inter-
preters. There may even be a serious ambiguity in Aristotle's
initial formulation of the view that "it is necessary for every
affirmation or negation to be true or false." Some of this ambi-
guity may persist through his discussion. Nevertheless, I fail to
perceive any trace of the problem of future truth in Aristotle's
solution. Aristotle probably thought that a solution of the problem
of omnitemporal truth is a fortiori a solution of the problem
of future truth.

FURTHER EVIDENCE

Aristotle's fundamental point in *De Interpretatione* ix concerns, we have argued, the relation of temporally qualified to temporally unqualified sentences. Is this suggestion borne out by Aristotle's way of handling temporal terms in *De Interpretatione* ix?

Although Aristotle is not quite as clear as one might wish, it seems to me that the answer is affirmative. In any case, it is patent that Aristotle sometimes thinks and talks of what happens or is supposed to happen at some particular moment of time and that he at other times speaks of what happens at a great number of different moments of time. For instance, when he speaks of predicting an event "ten thousand years beforehand" (18b34), and says that it does not matter how old the predictions are, he is clearly thinking of predictions pertaining to one and the same moment or period of time. Likewise, when Aristotle discusses the possibility or necessity of a sea fight tomorrow, he clearly has in mind a sea fight on a specific day. He is not thinking of the predictions which on different days might be made by uttering the same form of words "there will be a sea fight tomorrow." Perhaps more importantly, in his fullest formulation of the problem he is discussing, Aristotle starts from something which is *now* true and goes on to consider potential predictions concerning it (see 18b9-15, quoted above on pages 482-483).

On the other hand, it is plain that several expressions used by Aristotle presuppose a whole range of different times or different cases. Our outline of Aristotle's solution contains several instances of this. For instance, in (O.o) (19a9-11) Aristotle speaks of "things that are not always (μὴ ἀεί) actual." In (o.4) (that is, 19a20-22) he discusses what happens "as a rule" or perhaps rather "in most cases" (ὡς ἐπὶ τὸ πολύ). This expression is discussed at length at *Analytica Priora* I, 13. Aristotle's examples there make it obvious that he has in mind a variety of similar cases. A given individual man either becomes gray-haired or fails to do so. If we say that a man becomes gray-haired "as a rule," we are really speaking of a variety of different men.

The statement that sometimes one member of a pair of contra-

dictories is "truer" (μᾶλλον ἀληθής) than the other appears to be a reformulation of the statement that it is true "as a rule"; and a closer look at the situation bears this out. The well-known Aristotelian definition of truth leaves no room for different degrees of truth; things are either said to be as they are (and truly so) or else as they are not (and falsely so). The sense of the expression "truer than" in Aristotle is brought out by his use of the closely related expression "more in one way than the other" (μᾶλλον οὕτως ἢ ἐκεῖνος) at *Analytica Priora* I, 13, 32b17-18 (compare also *De Interpretatione* ix, 18b9). The context there shows clearly that what is meant is simply "happens *more often* in one way than the other." And the company kept in *De Interpretatione* ix by the locution which Ackrill translated "as chance has it" (ὁπότερ' ἔτυχε) commits it to the same group of expressions as "in most cases" and "truer than."

Again, this is confirmed by what we find elsewhere in Aristotle's writings. The locution ὁπότερ' ἔτυχε is closely related to the locution ἀπὸ τύχης in Aristotle's discussion. The former is used when Aristotle is dealing with pairs of contradictories, the latter when he deals with individual events. Now ἀπὸ τύχης is used by Aristotle—for example, at *Analytica Priora* I, 13, 32b12— in a context which shows that it presupposes relative frequencies of events. The same point is attested to by *Physics* II, 5, as is also our point concerning ὡς ἐπὶ τὸ πολύ (compare also *Metaphysics* VI, 2, especially 1026b27-1027a28).

Once all this is perceived, it is also seen that Aristotle's solution of his problem turns on the use of temporally unqualified expressions which enable him to discuss a whole range of similar cases in one formulation. A comparison between stages O and III of our outline is especially instructive here. The phrase "as chance has it" occurs both in (O.2) and in (III. 2), and the paradoxical phrase "truer than" is found both in (O.4) and in (III. 4).

An examination of Aristotle's usage thus serves to corroborate the analysis which was offered of Aristotle's solution. Aristotle is sometimes thinking of individual events and sometimes of a number of similar events. He has to distinguish the two points of view from each other. What is more natural than to assume that he does so in (I. 3) (that is, at 19a25-26)? It may also be observed

that Aristotle's putative arguments for determinism seem to be preponderantly in terms of statements about what happens at a particular moment of time, whereas his professedly libertarian conclusions (stage III) are, as we just saw, mainly in terms of expressions which are *not* tied to a particular moment of time. All this is just what is to be expected on our interpretation.

We can also understand the puzzling juxtaposition which occurs at 19a36-39—that is, in the three clauses (III.1-2) and (III.4). How can Aristotle first say that one member of each pair of contradictories is necessarily true and the other member false, and then go on to remark—in (III. 4)—that one of them often is merely "truer" than the other, thereby unmistakably implying that sometimes neither of them is "truer" than the other? If one member is in each case true and the other false, surely the former is "truer" than the latter! This implication is further borne out by a comparison with (O.4).

An answer is implicit in what has been said. At each moment either p or not-p is for Aristotle true and the other false, no matter what p is. Hence (1) is always true and (2) therefore true. But it does not follow that if the two disjuncts are considered separately one of them is "truer" than the other in the sense of being true *more often* than the latter. This presupposes that p is a sentence with a changing truth value; but we have seen that Aristotle was wont to operate with just such sentences.

SOME UNFINISHED BUSINESS

Thus there seems to be strong evidence for our interpretation. This interpretation, however, gives rise to a problem which I am not able to solve here.

I have asserted that for Aristotle possibility tended to be identified with sometime truth and necessity with omnitemporal truth. This formulation is not unproblematic. We have not made clear what exactly are the cases which have to be true in order for something to qualify as being true omnitemporally; and Aristotle never seems to make it unequivocally clear. Take, for instance, Aristotle's statement that "this coat" may wear out but that it also may be cut before it wears out (19a12-18). Now it is

clear that in a sense one of these two possibilities will never be realized. If the coat is cut, it will not wear out, and vice versa. Hence Aristotle can equate possibility with sometime truth only if he thinks that he is dealing with statements of the form "a coat will wear out" and "a coat will be cut" or perhaps "such and such a coat will wear out" and "such and such a coat will be cut," not with the statements "*this* coat will wear out" and "*this* coat will be cut"—or so it seems. In other words, a statement as to what is possible in a given moment to a given individual must be taken as an elliptical statement which really says something about all the similar individuals at all the different times. A mere generalization with respect to time is not enough; Aristotle apparently has to generalize also with respect to individuals. That this is what he does is strongly suggested by *Analytica Priora* I, 13 (32b4 ff).

Somewhat similar remarks pertain to the interpretation we have offered of Aristotle's solution of the problem of the sea fight tomorrow. I have suggested that Aristotle considers the occurrence of a sea fight tomorrow contingent because in similar circumstances in the past and in the future it sometimes is true and sometimes false to say "a sea fight will take place tomorrow." In other words, if one asserts the contingency of tomorrow's sea fight, one is not any more speaking of *this* individual naval engagement; one is speaking, however elliptically, of similar sea fights in the past and in the future.

Of this part of our solution I am not at all sure. It is obvious enough, on the evidence we have found, that Aristotle thinks he can escape his difficulties by making the assertion of the contingency of the sea fight an elliptical assertion of the truth of at least one case among several. But what these cases are is not obvious. There are indications which perhaps suggest that Aristotle may have thought that a mere generalization with respect to time is enough, without having to go beyond considerations pertaining to one individual sea fight.

By this I mean the following: Aristotle may have thought that the truth and falsity of a statement (made at a given moment of time) is determined by its agreement or disagreement with the facts *as they are at that particular moment*. It is possible that Aristotle's

version of the correspondence theory of truth was a theory of *momentary* correspondence.[27] And if so, Aristotle might have thought that the reason the statement "a sea fight will take place tomorrow" is contingent is that its truth value (momentary truth value in the sense mentioned) will still change. At this moment, the admirals are confident and in a fighting mood, and their intelligence underestimates the power of the enemy; in short, the situation is one which naturally leads to a fight. If so, it may be suggested, it will be true to say that there will be a sea fight. But after a couple of hours, the intelligence estimates may have become pessimistic and the admirals timid. The situation presumbly will lead to a failure of the sea fight to materialize. If so, then it is perhaps false to say that a sea fight will take place. Now if a situation of the first kind never occurs between this moment and tomorrow, then (Aristotle may have thought) there is no chance that the sea fight would come about. By the same token, if a situation of the second kind will never come about, there is no opening for the sea fight to fail to take place. Then it presumably will take place necessarily.

Thus it is not impossible that Aristotle should have thought that a generalization with respect to time was enough to deal with his problem.

There is not much evidence one way or the other. The view just sketched is made implausible by the fact that it does not seem to leave Aristotle any reason to suppose that, of each pair of contradictories referring to a future event, one is at each given moment true and the other false, as he seems to assert in (III. 1). For the situation might be such that it does not give rise to a sea fight any more naturally than to the absence of one. Hence I suspect that this view is mistaken.

There are, however, mild indications favoring it. At 19a1-6 Aristotle argues that if the nature of things has always been such that something is true, it will be *necessarily* true. This seems to refer to the state of affairs at different moments of time. One might also try to read something similar into 19a32-35—not very

[27] Cf. Ackrill pp. 140-141. There is, however, a fairly clear counterexample at *De Gen. et Corr.* II, 11, 337b4-6.

convincingly, because this sentence primarily serves to mark the transition from stage II to stage III. The third piece of evidence is somewhat more conclusive. It is the word which Ackrill translates in (III. 4) "already." This word is ἤδη, which can naturally mean something slightly more than "already," namely "from now on." If it means this in (III. 4), we really seem to have a statement which definitely supports the view I just sketched. For how can Aristotle first say that an affirmation or the corresponding negation concerning a particular future event must be true and the other false (III. 1) and then add that neither of them is *already* true unless he means that neither of them is going to be true *from now on?*

It must be admitted, nevertheless, that the sense of the word ἤδη here is highly controversial. In any case, I have not been convinced by the attempts to understand it in some other way— for example, by Miss G.E.M. Anscombe's arguments to the effect that it has here a nontemporal sense, that "not already" here means something like "not thereby shown to be."[28] The meaning of ἤδη is explained by Aristotle in temporal terms in *Physics* IV, 13 (222b7 ff.). In a discussion of closely related matters in *Metaphysics* IV, 3 it has a temporal meaning, as it indeed often has in comparable contexts; compare, for example, *De Interpretatione* xiii, 23a14. It would have been uncharacteristically careless of Aristotle to use it in a nontemporal sense in the midst of a discussion charged with temporal notions. Most importantly, I find Miss Anscombe's reading very difficult to reconcile with (III. 1).

Thus I find it impossible to make up my mind here, finding some solace in the suspicion that Aristotle perhaps did not make up his mind, either. He certainly did make up his mind concerning certain other topics—for instance, causation—which are relevant to the interpretation of *De Interpretatione* ix and which might, carefully considered, serve to dispel some of the suspicions which undoubtedly still linger in the minds of many readers.[29] A dis-

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[28] "Aristotle and the Sea-Battle."

[29] On the Aristotelian notion of causation and its relation to modal notions, cf. John W. Lenz's paper, " 'Possibility' and 'Necessity' in the Philosophy of Aristotle," read at the 1962 meeting of the American Philosophical Association in New York City. I am indebted to Lenz for useful information and comments on the subject of this paper.

cussion of these topics goes beyond the limits of this paper, however, because they are not explicitly taken up by Aristotle in *De Interpretatione* ix.

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