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Chapter 17

To Tell the Truth: *Dissoi Logoi* 4 and Aristotle's Responses

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I here consider ancient discussions of a peculiar phenomenon: a *logos*, understood as a sequence of written or spoken words, retains its identity through time, even though as circumstances change it says different things. I do so in honor of A. P. D. Mourelatos, who has spent his life studying *logoi*, and encouraging others to do the same. The example of his probing insight, clarity of thought and patient attention to these same sequences of words has done to teach us how to listen to what they still say.

Certain words, such as 'this,' 'now,' 'me' and 'here,' and many occurrences of verbs in the present tense, can be interpreted only if one considers the context of the sentence of which they are a part. These terms are called 'token-reflexives,' 'indexicals,' 'demonstratives,' or 'egocentric' terms, and the problem of their analysis has come to occupy a central place within the of language. The problem has important repercussions on fundamental issues concerning what language is and how it serves as a vehicle by which assertions are made about the world.

Within *Dissoi Logoi* (henceforth '*DL*'), a fifth century sophistic text of unknown authorship, we find several puzzles focusing on an

odd characteristic found in sentences employing indexicals: the same sentence (such as 'I am now reading a paper') can be both true and false. Aristotle was aware of these puzzles and devised three different ways of solving them. I here examine the puzzles as they are presented in *DL* 4, as well as Aristotle's solutions. Aristotle struggles to account for this kind of change in truth value within the context of his evolving metaphysics of substance. He initially approaches the problem through regarding a *logos* as a kind of self-subsistent entity, and moves to an alternative solution which understands a *logos* as an action that a person performs.

I

The earlier sophists were impressed by the great power that *logoi* have in altering human beliefs and passions. Their investigations into language were largely motivated by the desire to master its power to alter human beliefs and passions.¹ Protagoras' declaration that 'there are two *logoi* concerning everything, these being opposed each to the other' (DK 80 A1)² is at its root not a metaphysical thesis,³ but a proclamation of the great versatility and power of language.⁴ A skilled speaker can employ *logos* to achieve either of two opposed effects. If one *logos* is to be used to convince a listener of *p*, there is available another *logos* by which the same listener can be convinced of not-*p*. Plato tells us of some who thought that they were in possession of an art, ἡ ἀντιλογική, by which such opposed *logoi* are discovered and expressed (*Ly.* 216a, *Phd.* 89d-90c, *Phdr.* 261c-e),⁵ and that Protagoras wrote a text⁶ which presented a number of such opposed arguments. His students could make use of these tropes when they saw fit, or could employ them as models for devising their own arguments (*Sph.* 232d). This text is lost. But *Dissoi Logoi* also follows this general pattern, for which reason the text has been considered as having been heavily influenced by the teachings of Protagoras.⁷ Within *DL* 1-4,⁸ the author examines pairs of opposed predicates A and B, first presenting arguments to the effect that 'the A and the B are the same,'⁹ and then presenting arguments to the effect that they are different. In order to show that 'the A and the B are the same,' the author presents a number of specific cases in which a certain thing that is A (in some respect, or at some time) is also B (in some other respect, or at some other time).¹⁰ For example, the argument of Chapter 1 that 'the good and the bad are the same' rests on

considering the fact that certain food is good for the healthy and bad for the ill.¹¹

The locution τὸ A is ambiguous; it can refer either to the thing that is A, or to the attribute of A-ness itself. The author successfully shows that certain things that are A are also things that are B. However, Chapters 1-4 each conclude with arguments to the effect that the A is different from the B, on the grounds that absurd consequences result from taking the two *characteristics* to be identical. Such a *logos* to the effect that 'the A and the B are different' will be opposed to the *logos* 'the A and the B are the same' only if the latter is understood as meaning that the characteristics of being A and B are the same.¹²

The first half of *DL* 4 follows this pattern, arguing that being a true *logos* is the same as being a false *logos* on the grounds that certain *logoi* are both true and false. It begins as follows:

People put forward opposed *logoi* concerning the true and the false. One of these [*logoi*] asserts that the true and false *logoi* are different things, while another asserts that they are the same. I am among those who put forward the latter [*logos*]. The first reason for this is that [the true and false *logoi*] are said in the same words. Next, whenever a *logos* is uttered, the *logos* is true if things have turned out in accordance with how the *logos* is said, but the same *logos* is false if things have not turned out in this way. For example, [consider a certain *logos* which] accuses someone of being a temple-robber. If the deed was done, the *logos* is true. But if the deed was not done, the *logos* is false. The *logos* of someone defending himself against temple robbery is also [to be understood] in the same way.¹³ The law courts, too, judge the same *logos* to be true and false. Consider this. If we are sitting next to each other, and should [at the same time] say [the words] 'I am an initiate,' we would all be saying the same [*logos*], but only I would say a true [*logos*], since I am in fact an initiate. It is clear, then, that when the false is present to [one and the] same *logos*, it is false, and when the true is present to it, it is true. This is similar to how a man is the same, though he is [in turn] a child, a youth, mature, and old.

What constitutes one and the same *logos* is problematic. For this reason, the author begins by laying down criteria for the identity of *logoi*. Two *logoi* are the same if they are composed of the same words

(presumably in the same order).¹⁴ What is at issue is whether a certain ordered set of words that constitute a *logos* can be both true and false. The author says that it can. He tells us that whether a given *logos* is true or false depends not on its own identity, as determined by the sequence of words that make it up, but on whether it is in accordance with something else, how things are.¹⁵ Even given the content of the *logos* 'X is a temple-robber,' the sequence of words by which its identity is determined, we may not know whether or not X is, in fact, a temple robber. Truth is rather a relation external to the *logos*, one which the *logos* either does or does not have in relation to the world. The author makes his case by asking us to consider the pragmatics of discourse. How is it that people actually go about determining whether a *logos* is true or false? A criminal defendant knows that his protestations of innocence cannot be evaluated as true or false on account of the words that he uses to testify to his innocence. Rather, evidence must be presented, to the effect that events really did occur as the defendant says they did. Likewise, when a judge or jury is deciding whether protestations of guilt or innocence are true or false, they attend to events, not merely to the contents of the *logoi* uttered.¹⁶

The author has claimed that truth or falsity is a matter of the relation of the *logos* to a changing world. One might respond that at any given time, the world is unambiguously such as it is, and hence *at that time* a single *logos* has only one truth value, for it either does or does not correspond to how things are in the world at that time. The next several lines can be taken to be a response to this suggestion. The author insists that, even synchronically, there will be cases in which a true *logos* is also false. One such case is that of a number of people simultaneously¹⁷ saying the words 'I am an initiate.' On the assumption that the identity of a *logos* is determined by the words making it up, all of these people are saying the same *logos*. There is one *logos*, and things do not change at the time the *logos* is spoken; yet this same *logos* is both true and false.

The author then tells us 'It is clear, then, that when the false is present to [one and the] same *logos*, it is false, and when the true is present to it, it is true.' The inferential particle ὅτι shows that this is presented as a generalization of the examples illustrating how the same *logos* could be true and false. Presumably, during the diachronic change of truth value, there is a time at which the true is present, and

another time at which it is not. This is analogous to how the same man, through the course of time, is at various stages of maturation. When the real and pretended initiates utter the same words, the true and the false are somehow simultaneously present to one and the same *logos*.

The author has here successfully disentangled the ambiguities of the τὸ A locution. If a true or false *logos* is said to be true or false by virtue of the presence of 'the true' or 'the false,' 'the true' and 'the false' refer not to the true and false *logoi*, but to the characteristics of truth and falsity themselves. The author is explicitly drawing attention to the distinction between a thing and the characteristic that 'is present to it' (παρῆ) A thing, whether man or *logos*, can take on opposing characteristics, each of which is either present to the thing or not.

This very distinction is at the core of the response made by Socrates, in Plato's *Parmenides*, concerning how the units of a multitude can be both like and unlike. Zeno argues that if there is a multitude, the members of such a multitude are both like and unlike; hence, on the supposition of plurality, the like is the unlike (127e). The structure of this argument is parallel to the arguments for the identity of opposites found in the first four chapters of *DL*. Socrates responds to it by pointing out that the characteristics themselves, or Forms, do not admit of their opposites; the things that participate in them do (128e-130a).¹⁸ In outline, at least, this is consonant with what the middle dialogues have to say concerning how sensible things have certain characteristics predicated of them. At *Phaedo* 100d5, Plato calls the relation between a thing and its Form παρουσία, cognate to at *DL* 4.5.¹⁹ For this reason, this passage of the *DL* is recognized as important evidence for determining the history of the development of Platonic metaphysics, for if, as is commonly accepted,²⁰ the author of the *DL* is a contemporary of Socrates, the passage suggests that Plato himself is not the source for some of the key conceptual resources employed within the metaphysical theory of Forms.²¹

This historical question does not concern me here. But I note that within the *Parmenides*, Socrates employs the distinction between a Form and that to which the Form stands in the relation of παρουσία, in order to show how the fact that a certain object is both A and B (the contrary of A) does not mean that the character A is the character B, or vice versa, and such an argument would be effective against the

strategy by which contraries are identified in the first four chapters of *DL*. Indeed, we shall see that this is precisely the strategy employed by Aristotle in his first attempt to deal with the puzzle of *DL* 4. Here, however, the analysis of predication as is not employed to show *how* a *logos* can stand in the relation of to both a characteristic (truth)' and its contrary (falsity). Rather, the author uses it to convince us only *that* a single *logos* is both true and false.

These puzzles concerning truth and falsity are followed by an opposed *logos*, which points to absurd results that follow from denying that being a true *logos* is in fact something different from that of being a false *logos*. The opponent of the relativism of truth must find the flaw in the first set of puzzles.

II

As is the case for many sophistic puzzles, one almost immediately recognizes that a fallacy is afoot; but it is difficult to diagnose exactly what the fallacy is. Most of us would at least initially be inclined to approach the puzzle in the following manner. We would agree with the author of the *DL* in taking truth and falsity to be characteristics of certain linguistic entities (*logoi* or propositions or sentences). But we would deny the premise that the identity of this linguistic entity is wholly determined by the words in the sentence that express it. A Greek might put the point by saying that 'I am an initiate' is a different *logos*, when spoken by different people. This is inadequate for resolving the fallacy, until there is an account of what a *logos* is, and of how it is to be individuated.

A number of figures in twentieth century philosophy of language have offered such an account. Frege posited the sense of a sentence as a nonlinguistic entity, in principle epistemologically accessible to members of a linguistic community. This sense is to be identified with the thought, the object of the activity of thinking. Frege considers how two sentences employing different temporal or spatial indexicals have the same sense, that is, express the same thought.

.. . [T]he time of utterance is part of the expression of the thought. If someone wants to express today what he expressed yesterday using the word 'today,' he will replace this word with 'yesterday.' Although the thought is the same its verbal expression must be different in order that the change of sense which would be otherwise be effected by the differing times of

utterance may be canceled out. The case is the same with words like 'here' and 'there.'²²

Russell and Ayer are two philosophers of language who employed the Fregean strategy. Russell, at the earliest phase of his career, posited a certain sort of entity called a 'proposition,' which is what is asserted by a sentence, a linguistic entity. A proposition is itself nonlinguistic (except when the sentence is about language itself).²³ The puzzle of 'I am an initiate' would be solved by realizing that in each case 'I' is a different 'term.'²⁴ Likewise, much later, A. J. Ayer distinguished between situations and occasions. Occasions are possible or actual particular occurrences. Situations, unlike occasions are repeatable. Two occasions exemplify the same situation if they resemble each other in the appropriate way.²⁵ The reference of indexicals is determined by the situation of the speaker,²⁶ but in principle the same occasions can be described without their use.²⁷ If two speakers are to both say 'I am an initiate' they will be describing the same situation, but different occasions. Because one occasion is actual and the other is not, the statement of one speaker is true, and the statement of the other is false.²⁸

Such a solution is not put forward by the author of *Dissoi Logoi*. More surprisingly, it does not seem to have occurred to Aristotle,²⁹ who seems to have found the puzzle especially perplexing. As usual, Aristotle is at his most interesting when dealing with a problem whose solution threatens to be beyond his grasp.

III

Aristotle accepted the Platonic distinction between things and their characteristics. When Plato identified characteristics, or Forms, as *ousiai* he was led to assign a derivative ontological standing to the subjects that participate in these characteristics. Such things are what merely participate in the Forms. This move ultimately results in an indeterminate, unknowable Receptacle as ultimate substrate.³⁰ A major ontological innovation of the *Categories* was to grant maximal ontological standing to the subjects of characteristics. It is these subjects, not the characteristics to which they stand in relation, that are the *ousiai*. So that they might avoid the fate of Plato's ultimate substrate, substances are granted certain characteristics that those substances are, their essences.³¹ An object can take on either of the

contraries A and B as long as the essence of the object, what it *is*, neither includes nor entails A or B. At *SE* 22, 178b24-9, Aristotle employs this strategy to show that truth and falsity are not the same.

The context is an account of how certain fallacious arguments can be refuted by showing that certain terms are being used in more than one way (a special case of which is homonymy; 178a24-5, cf. *Cat.* 1a1-6). Aristotle's diagnoses of the fallacies share the following form. The argument in question employs two premises, each of which contains the problematic term. Each premise is true, if the term is taken in one manner, but is false if taken otherwise. The puzzles are resolved by showing that; if it is to be interpreted in the manner that renders each premise true, each premise employs the term differently from how it is used in the other.

SE 22 is devoted to analyzing cases in which terms are used in more than one way, on account of their being used in respect to more than one of the categories (178a5-6). As in the closely related *Topics*, Aristotle moves freely from considering the categories as a classification of kinds of predication and a classification of kinds of things.³² When classifying predicates, the first category is the *ti esti*, or essence. When classifying things, the first category is *tode* or *tode ti*. To employ a term as predicating the essence of a subject is to use the term in a manner fundamentally different from using it to predicate of a subject something that is not its essence.

Aristotle makes use of this categorial distinction in addressing the puzzle of how the same *logos* can be both true and false:

Further, the following are among these kinds of arguments: 'Did someone write what is written? But now it is written that you are sitting, a false *logos*. But it was true when it was written. Therefore what is written is both false and true.' For 'being a true or false *logos*' or 'being a true or false belief; signifies not a 'this' but a 'such.' (τὸ γὰρ ψευδῆ ἢ ἀληθῆ λόγον ἢ δόξαν εἶναι οὐ τόδε ἀλλὰ τοιόνδε σημαίνει). The same point can also be made in regard to belief. (*SE* 22, 178b24-9)

Although there is no clear evidence that Aristotle knew the *Dissoi Logoi* itself, this passage shows that he is aware of the sophistic puzzles concerning truth and falsity that are propounded in the first half of *DL* 4. Like the *logos*³³ 'X is a temple-robber,' the *logos* 'you are sitting' changes in truth value as circumstances change. Aristotle accepts that it is in fact one and the same particular *logos* that persists through

time. The change in truth value is to be explained like any other variety of nonsubstantial change.³⁴ A thing, a *tode*, retains its identity even as it accepts in turn contrary characteristics. For example, a body is a *tode*, and becomes both hot and cold because neither of these temperatures is a *tode*; they are rather qualities. In the case at hand, the *tode* is the *logos*, and the contrary characteristics that it can either take on or lose are truth and falsity.³⁵ Change in truth value has the same ontological structure as change in temperature. Aristotle's response to the puzzle is parallel to Socrates' response to Zeno: the fact that a thing (the *logos*) is such as can admit of contrary attributes (true and false) does not mean that the attributes themselves are to be identified.

IV

Within the *Categories*, we see the first item in the categorial classification of things (what is called a *tode* in the *SE*, and an *ousia* in *Top.* 1.9.103b28) identified with the ultimate substrate of things which underlies change in regard to contrary characteristics. Within this same work Aristotle denies that *logoi* are substances. (Aristotle's reasons for this must be surmised from *Int.* 4, 16b26,³⁶ in which a *logos* is defined as a kind of φωνή σημαντική ; a φωνή is a certain means by which animals impart motion to air.³⁷ It is something that someone or something *does*, and, as such, is in the category of ποιῆν.) The solution of the puzzle of *DL* 4 will not stand if a *logos* is not taken to be a true *tode*. Aristotle is compelled to return to the puzzle of *DL* 4.

He does so in *Categories* 5. After having asserted that substances alone are such as to retain their identity through an exchange of contraries, he presents change in truth value as a possible counter-instance:

Such a characteristic appears to be found among none of the other kinds of thing, unless someone were to object that *logos* and belief have this characteristic. This is because the same *logos* is apparently both true and false. For example, if the *logos* 'X sits' were true, once X stands up, the same *logos* will be false. The situation is similar in the case of belief. For if someone were to truly believe that X is sitting, then should X stand up, he will believe this falsely, even though he has the same belief about this same matter. But even if someone were

to grant that this is so, nonetheless there is a difference in how this is so. In the case of substances it is the changing things themselves that can admit contraries. For let us say that there was a change when something became cold from being hot (since it underwent qualitative alteration), and when it became dark from being pale, and when it became good, from being bad. Likewise in the other cases, a particular thing can admit contraries, since it itself admits change. But *logos* and belief remain entirely immobile in every respect, and one or another contrary comes to be applied to them because the situation (πρᾶγμα) is changing. For the *logos* that X sits remains the same, but it comes to be true at one time and false at another on account of a change in the situation. This is how things stand in the case of belief, as well. So it would follow that substance is unique in being able to admit contraries on account of a change in the thing itself. (4a21-b4)

Aristotle still agrees with the author of *DL* 4 that a *logos* like 'X sits' remains the same *logos* even when said at different times.³⁸ So at this juncture it appears that a *logos* does remain the same while admitting contrary predicates; this is not something of which only substances are capable. Nevertheless, here, in his second approach to the issue of change in truth value, he denies that the *logos* changes in truth value. He denies this, not because the *logos* does not persist, but because, having different truth values at different times is, properly speaking, not a case of change at all. In such a case, it is the world, not the *logos*, that is changing. Elsewhere in the *Categories* Aristotle tells us that a state-of-affairs (τὸ πρᾶγμα) in the world is prior to the truth of a *logos* that expresses this state-of-affairs, for the latter is the ἀίτιος of the former (*Cat.* 12, 14b18-20; cf. *Metaph.* IX.10, 1051b6-9).³⁹ It stands to reason that a change in how things are could result in a change in truth value, since the *logos* would either gain or lose the relation of correspondence with reality. (Cf. *Ph.* V.2, 225b11-13; *Metaph.* XI.12, 1068a11-13, according to which there is no change in regard to relations, for the relation could at one time hold and at another not hold, even though one of the terms of the relation does not change.) On this analysis change in truth value is an example of what, following Geach, has come to be known as a Cambridge change.⁴⁰ For such a case satisfies Russell's criteria for change (which is to have incompatible predicates predicated of a single subject at different times⁴¹) but nonetheless it seems counterintuitive to

understand the subject as undergoing change, since this subject maintains its character or position, even as it maintains different relations to an object which is itself a true subject of the change at issue. It is not at all clear how to precisely formulate the distinction between what is and is not the subject of the true change; nor is it clear whether the Aristotle of the *Categories* has the resources for solving the problem. An Aristotelean response to the problem of Cambridge changes would need to appeal to Aristotle's own definition of change, as a certain actualization of a potentiality (which definition would have been at hand at the time of the writing of *Ph.* Y.2, 225b11-13 and *Metaph.* XI.10, 1068a11-13, cited above). Perhaps he would argue that a thing is a true subject of change if it is the real ontological substrate for the potentiality whose actualization constitutes the change. But the distinction between actuality and potentiality is absent from the *Categories*.

Immediately following the above passage, Aristotle offers a third solution, perhaps because he is aware that there are important theoretical gaps in the solution that he has just proposed.

These things are so, provided that one really does accept that belief and *logos* are such as to admit contraries. But this is not the truth. For *logos* and belief are not said to be able to admit contraries by virtue of admitting anything themselves, but by virtue of something having happened to something else. For a *logos* is said to be true or false by virtue of the fact that something happened to something else, not by virtue of the fact that it itself can admit contraries. For strictly speaking, no *logos* or belief is changed by anything. So, since nothing happens in them, they do not admit of contraries. But substance is said to be able to admit contraries, on account of the fact that it itself admits contraries. For a substance admits disease and health, and both a pale and a dark complexion, and it is said to admit contraries because it itself can admit each of the things of this kind. So being such as can admit contraries while it is the same thing, something one in number, is [a characteristic] unique to substance. (4b4-18)

Just before this, Aristotle had retreated from the thesis that only substances remain the same while admitting contrary predicates. The puzzle of *DL* 4 forced Aristotle to instead advocate the weaker thesis: that only substances remain the same while admitting contrary predicates, through a change that is not a Cambridge change. But here

Aristotle indicates that such a retreat is not necessary. Rather he tells us that the sorts of examples brought up in the *aporia* are not counterexamples to the stronger thesis, since a *logos* does not in fact admit contraries at all. How is it that Aristotle denies that the *logos* admits contraries, even as he affirms that the same *logos* is both true and false? No real answer is provided by the reason given by Aristotle for denying that, properly speaking, *logoi* admit contraries. The stated reason is that *logoi* do not *themselves change*; change in the truth value is resultant from the change in the things with which the *logos* is concerned. But this is precisely the point that Aristotle has already made in support of the weaker thesis that substances alone accept contraries through a change that is not a Cambridge change. Now, however, he is using this point to support the thesis that a *logos* does not admit contraries at all.

Perhaps Aristotle is advocating a new sense of 'admit' ἐνδέχασθαι, according to which S admits C if and only if S can itself *change* from not being C to being C, or vice versa. On this account, the thesis that only substances can remain one in number while accepting contraries is in essence the thesis that only substances themselves change. But *why* can only substances change? The answer is that only substances are an enduring substrate for those nonsubstantial characteristics of things that come and go. If a substance S has characteristics C and D, and D is replaced by its contrary E, while C remains, one cannot properly say that C is changing, accepting both of the contraries D and E. Perhaps by 'the time of the writing of *Physics* III Aristotle could explain why in such a case C is not itself changing, by appealing to the definition of change: C, as inherent in S, does not have the potentiality for either D or E. But, barring such an account, the best that Aristotle can do is to assert without argument that what is most accurately said to change is that which serves as the ontological substrate for the contraries being exchanged. Only the substrate can be properly said to *accept* contraries. This analysis holds whether or not S changes from being D to E (or vice versa) by means of a mere Cambridge change. The question is not one of the aetiology of change, but of its ontological structure. Whether or not the exchange of contraries is a Cambridge change, what admits the contraries is their substrate.

The point that Aristotle is making follows from the preceding sections of the *Categories*. In the first five chapters of this work

Aristotle develops a complex ontology, by which he clarifies the synchronic relations that hold among various kinds of beings at any given time. According to this scheme, primary substances are the true subjects of predication, since other things exist only insofar as are 'said of' or 'are in' these substances. It follows that sentences whose subjects do not refer to substances, such as 'the color is bright' and 'the walk was brisk' are not expressed in a logically perspicuous manner, insofar as the structure of linguistic predication is not in accordance with the ontological structure of things. For example, 'the color is bright' is more properly expressed as 'substance A is brightly colored.' 'Bright' is simply a determination of the quality (color) that inheres in the substance. Properly speaking, the color is not the subject for the brightness; we could say that the color does not admit the contraries 'bright' and 'dark.' Likewise, 'the walk was brisk' is more clearly rephrased as 'she was walking briskly.' Again, the adverb 'briskly' is not predicated of 'walked,' which is in the category of action. Actions, properly speaking, do not admit contraries, for they are not true subjects. Even though one who begins by walking briskly, and then walks slowly, is not engaged in a mere Cambridge change. Nevertheless, the walking itself does not 'admit' the contraries 'brisk' and 'slow.'

Aristotle's solution to the problem of change in truth value in *logos* and belief is therefore to be interpreted as to the effect that neither a *logos* nor a belief is a substance, a true substrate, and hence is not the sort of thing that truly changes. This makes good sense of the Greek text, grants to Aristotle a cogent philosophical response to the problem under consideration, is consonant with Aristotle's explicit denial that *logoi* and beliefs are substances, and rests on the ontological work done in the immediately preceding pages.

What the *Categories* does not make clear is what Aristotle takes the ontological status of *logoi* and beliefs to be. Here my argument must be a bit speculative. *Logoi* and beliefs must needs stand in intimate relation to the activities of speaking ($\lambda\acute{\epsilon}\gamma\epsilon\iota\nu$) and believing ($\delta\omicron\xi\tilde{\alpha}\zeta\epsilon\iota\nu$). If they are independently standing objects of such activities there must be a place for them within Aristotelian ontology. Since there is not, they must be identified with the activities themselves. Thus, as we have seen Int. 4 understands *logos* as a variety of $\phi\omega\nu\acute{\eta}$, and $\phi\omega\nu\acute{\eta}$ is a certain kind of noise (DA II.8, 420b6), distinguished by its conveyance of meaning (Pol. 1.1, 1253a10-15).

Likewise, at *APo.* II.19, IOOb5-7, belief $\delta\acute{o}\xi\alpha$ is taken to be a *hexis* concerned with *dianoia*. That is to say, the ability to have beliefs is an ability to engage in a certain kind of thinking. It stands to reason that a belief itself is a variety or aspect of the mental activity of thinking ($\delta\iota\alpha\nu\omicron\epsilon\tilde{\iota}\nu$) in a certain way.⁴² As Simplicius recognizes, it is precisely because *logoi* are actions that they have no permanence and cannot properly be said to persist through time. According to Simplicius, it is for this reason that one cannot strictly speaking say that it is the very same *logos* that is both true and false.⁴³

Accordingly, truth and falsehood do not inhere in *logoi*. Rather, speaking truly and speaking falsely are contrary actions, and these actions inhere in human beings. In speaking truly, one is engaged in the action of speaking things as they are. In speaking falsely, one is engaged in the action of speaking of things as they are not. Strictly speaking, one and the same act of speech cannot change from being true to being false. However, a speaker can change from speaking truly to speaking falsely.⁴⁴

The following example would be structurally parallel to change in truth value, as Aristotle understands it. Imagine a pair of contraries 'sky-matching' and 'not-sky-matching,' which are applicable to a color, depending on whether or not that color matches the color of the sky. As the sky turns from blue to black, an individual shade of blue passes from 'sky-matching' to 'not-sky-matching.' This does not occur by virtue of any change in the color, for two reasons. First, the change is a mere Cambridge change. It is properly analyzed as resultant from a true change in something else, the sky. Second, in order to distinguish a real change from a mere Cambridge change, we are led to an ontological analysis, which tells us that the colors do not themselves receive contraries; the substances in which the colors inhere do. Accordingly, it is impossible for the same color to persist, in turn admitting the contrary characteristics of 'sky-matching' and 'not-sky-matching.' This is not because it is not the case that the same color is at different times both sky-matching and not-sky-matching, for this is in fact the case. Nor is it because change from being 'sky-matching' to 'not-sky-matching' is a mere Cambridge change (though this is in fact the case). Rather, it is because, strictly speaking, colors 'admit' no predicates at all, since they are not true subjects. Likewise, from an Aristotelian perspective, it is in the last analysis an error to think of *logoi* (even considered as actions inherent in speaking substances) as

the bearers of truth value. Truth and falsity are not predicates at all. Rather, it is the speaking subject that can bear the predicates 'speaking truly' and 'speaking falsely.'

There are of course severe and longstanding problems in interpreting what a particular shade of blue *is*, for Aristotle. Is it a universal taken at the highest level of specificity, or some sort of irreproducible particular? This same issue emerges for particular actions, such as *logoi*. Is a particular *logos* an action spoken by a particular person at a particular time, or is it the most specific kind of act of speech? I note in passing that if Aristotle thought that the *logos* 'X sits' was one particular non-substance, when spoken at one time, and is another particular non-substance, spoken at another time, it would be very easy for Aristotle to solve the puzzle of how a single *logos* can admit contrary truth values. He could have simply pointed out that we have two *logoi*, not one. The fact that he does understand the same *logos* as somehow persistent provides some support for Owen's view that the individual non-substances of the Categories are universals,⁴⁵ for a particular act of speech is temporally localized, and does not persist once it has been uttered.

V

Leaving aside this ontological issue, we summarize: Aristotle's considered view is that when a *logos* that employs indexicals changes in truth value, this is not to be explained by noting that such change is a mere Cambridge change. Rather, we must say that, strictly speaking, the *logos* does not change at all, for it does not admit contraries, which, I argue, means that it is not the true ontological substrate for truth and falsity. It is clear that Aristotle is here considering 'X sits' as the same (at least in *eidos*, as Simplicius puts it⁴⁶) when spoken both before and after. Because a *logos* is defined as a φωνῆ σημαντική, he must hold the view that there is identity of both phonetic and semantic content. He is continuing to pursue his analysis on a path other than that of the Fregean solution, according to which, in spite of identity in wording, there is differing semantic content of the two *logoi* employing temporal indexicals, when spoken before and when spoken after.

We may, however, ask the following. Beyond verbal identity, exactly how are the two *logoi*; identical? I offer the following considerations.

For Aristotle, a φωνὴ σημαντική is a communicative act, something someone does. Thus, whether I am speaking at 3 pm or at 10, when I say 'Socrates is sitting' I am *doing* the same thing, namely, affirming that the hexis of sitting inheres in the substance Socrates.⁴⁷ The point can be extended in regard to the other sort of example employed in *DL* 4. Two people who say 'I am an initiate' are engaged in the same variety of communicative act, that is, they both affirm their status as initiates. Both are engaged in the action of signifying their thought, and both are thinking the same thing, their own affirmation of being an initiate.⁴⁸

Aristotle is clear that *logoi*, φωνὰ σημαντικά, comprehend more than declarative sentences. Prayers, for example are also σημαντικά, even though they do not admit a truth value (*Int.* 4 17a3-4). Language, for Aristotle, is a human activity, something that people *do* within the complex web of human relations (cf. *Pol.* 1.2, 1253a9-18). A *logos* is a human action; so too are the components of a *logos*, including indexical expressions. Keeping this in mind, we can better understand why Aristotle is not driven to reinterpret indexical expressions as either names or definite descriptions, and does not solve the problem of change in truth value by translating the *logoi* into other *logoi* free of indexicals. He would be in sympathy with the remarks of Wittgenstein:

One has been tempted to say that 'now' is the name of an instant of time, and this, of course, would be like saying that 'here' is the name of a place, 'this' the name of a thing, and 'I' the name of a man.. .. But nothing is more unlike than the use of the word 'this' and the use of a proper name – I mean the *games* played with these words, not the phrases in which they are used.⁴⁹

Indexicals are not alternative names, but are linguistic entities of another kind, by which one engages in the *activity* of *pointing* to a place, thing, or time. Wittgenstein's insight here has been very fruitful within the second half of the current century. Many now understand the use of indexicals as underlying the determination of the reference of terms and names within ordinary discourse. As Kaplan writes, 'If pointing can be taken as a form of describing, why not take describing as a form of pointing?'⁵⁰ Such pointing cannot be understood as equivalent to an alternative mode of referring to that which is pointed

at, which mode of referring does not employ indexicals; rather it is to be understood only *as* a kind of pointing. (One can point to different things in different ways; the kind of pointing that is at work in the use of a particular indexical is called its 'character' by Kaplan,⁵¹ and 'its role' by Perry.⁵²) Such a semantic strategy presupposes a Wittgensteinian understanding of language as like a 'game,' involving moves such as pointing, which are basic to the use of language and are not to be eliminated through translating the sentences employing indexicals into propositions that do not. To point (to one's position, time, or self, or that of another) is to be understood as something that people *do*; as Aristotle would put it, it is in the category of action.⁵³ And it is an action of a kind different from naming or describing.

Aristotle is up to much the same thing when he takes a *logos* such as 'I am an initiate' or 'X is sitting' to retain its identity, when spoken by different people at different times. He has not isolated and analyzed the use of the indexical, and hence has not become clear on what makes the use of an indexical different in kind from the use of any other term. But the problem of change in truth value in *logoi* employing indexicals is to be solved by pointing to a feature that such *logoi* have in common with *all logoi*: they are actions, and hence are not the sort of being that can be a substrate for any kind of change. Aristotle solves the issue of change of truth value by showing that when two utterances of a certain *logos* do the same work (that is, they have the same 'character' or 'role'), they are in a sense the same; yet even when such *logoi* do the same work, they may well have different truth values.

DL 4 presents the first evidence of philosophical reflection on the problem of indexicals. The author of the *DL* shows that he understands that the puzzle arises from the fact that, from the point of view of a logical analysis of language, multiple occurrences of the same indexical term (such as T or 'am sitting') are to be considered as fundamentally the same, an insight that agrees with much recent work on the nature of indexical expressions. Aristotle struggled with the implications that the puzzles of *DL* 4 raise for the principle of noncontradiction. The Fregean solution, according to which multiple occurrences of the sentences employing the same indexical term express something different (be it 'thought' or 'proposition') never occurred to him. After two abortive attempts at dealing with the issue, he finally employed the ontology developed within the Categories to

show that parallel uses of the same indexical term are actions of the same kind, performed by people within different contexts. For Aristotle, the principle of noncontradiction is to be applied, not to propositions (a kind of thing for which there is no room in his ontology) but only to individual acts of declarative speech. The same speaker cannot at the same time, in the same respect, speak both truly falsely.

Notes

1. See Guthrie, 1971, pp. 44-5; Mourelatos, 1985, pp. 607-38.
2. The translation is from Kerferd, 1981, p. 84.
3. E. Schiappa, 1991, pp. 90-100 understands the fragment as an expression of support for a Heraclitean metaphysics, but there is no evidence that Protagoras was aware of or influenced by Heraclitus' sophisticated metaphysical and physical accounts. At *Tht.* 152c-e, Socrates suggests that Protagoras is a Heraclitean, but since he makes the same claim in regard to Homer he cannot here be regarded as a serious historian of philosophy. But even if Plato's testimony is to be taken seriously, it is not the teaching of the unity of opposites that is attributed to Protagoras, but the thesis that all things are in flux. This quotation pertains to the pragmatics of speech; see Kerferd, p. 84. The teaching concerning the existence of opposed *logoi* may or may not have been intended to support the view that 'people are the measure of all things.' If 'all things' refers to all facts, that is, if Protagorean relativism is absolute, all of the opposed *logoi* that exist in regard to things would be true. For a *logos* to the effect that *p* could convince one that *p*, and the one so convinced would be the measure of its truth. Hence the existence of opposed *logoi* concerning everything would support Protagorean relativism. On the other hand, our evidence concerning this dictum is limited to Plato's *Theaetetus*, and within that dialogue Socrates takes Protagoras to restrict it to certain perceptual or normative features of the world. Whether such a feature as it appears is healthy or not, that is, whether or not having that appearance is advantageous or desirable, is not relative (166d-167d). If we take this to reflect Protagoras' own views (as does Kerferd, 1981, pp. 104-5) not all opposed *logoi* will in fact be true. For opposed to a true *logos* that a certain perception is healthy (with beneficial consequences) will be another asserting that this same perception is not healthy (with detrimental consequences), and this second *logos* will be false.
4. See Guthrie, 1971, p. 267.
5. On Plato's conception of antilogic, see Kerferd, 1981, pp. 59-67.

6. This text is presumably the Ἀντιλογιῶν α β of Diogenes Laertius 9.55.
7. See Trieber, 1892, pp. 210-48; Gomperz, 1912, pp. 162, 168-7 1; Guthrie, 1971, pp. 316-17; Robinson, 1979, pp. 54-7.
8. This line of argument (presented in regard to being and not-being) is also found in *DL* 5.5.
9. *DL* 4, the focus of this chapter, is a bit of an exception. The opposed predicates that are at 4.1 initially identified as under consideration are 'true' and 'false,' but the author does not examine whether 'the true' is the same as 'the false,' but whether 'the true *logos*' is the same as 'the false *logos*.' But we can consider the opposed predicates under examination as 'being a true *logos*' and 'being a false *logos*'; so considered, this chapter follows the pattern of the previous three.
10. In *DL* 2, the author does not only adduce certain examples of As that are also Bs. In the case of one pair of opposed predicates A and B (καλός and αἰσχρός) he affirms that *everything* that is A is also B. He does so by exploiting a general principle that lies behind his list of examples of certain actions that are both καλοί and αἰσχροί. The principle is that any action that is αἰσχρός when performed at the right time will be αἰσχρός when performed at the wrong time.
11. A similar list of things that are both good and bad is found in a speech attributed to Protagoras at Plato *Prt.* 334a-c.
12. Austin, 1986, pp. 116-21 has shown that these arguments of *DL* are possible only if the author employs premises such as 'S is A in some context' and 'drops the qualifiers.' In Austin's view, Protagoras recognizes that the qualifiers are not to be dropped, and is thus able to prevent the identification of contraries *tout court*.
The author of *DL* may wish to extend the reasoning to argue that *all* characteristics (including those not discussed) are identical with their opposites, or perhaps even to argue for the identity of all things and characteristics whatever. In Chapter 5, the author argues that the same things are said and done by the sane and the insane and by the wise and the foolish. To show this, the author adduces the fact that things that are larger also smaller, and likewise in regard to the pairs more/less and lighter/heavier. At 5.3 the author infers οὕτω γάρ ἐντι ταῦτὰ πάντα. The sense of οὕτω and the referent of πάντα are unclear. Sprague, 1972, p. 288, renders 'thus all things are the same,' taking οὕτω to mean 'as a matter of consequence' and πάντα to refer to all pairs of contraries. On her reading the author is arguing for a kind of Eleatic

monism. Such an argument would require premises distant from those stated. On the other hand, Robinson, 1979, p. 127, translates 'for in those respects all objects are the same,' taking οὕτω to be specifying the manner in which the contraries are the same and to refer to things characterized by the contraries. One could also take οὕτω as does Robinson, and πάντα as does Sprague, translating 'for in those respects all characteristics are the same.' This third reading, as well as that of Sprague, imputes to the author a more radical generalization of the instances the author adduces, but has the author making a point more directly supportive of the conclusion that the same things are said and done by the sane and the insane, as well as the wise and the foolish.

Barnes, 1979, pp. 518-22, understands *DL* 1-3 not as primarily concerned with the identity of contraries, but with the relativity of normative terms, and with the limits of moral generalization. No doubt the examples put forward in these chapters can be employed to argue that normative terms are always employed relative to persons affected, cultures, and situations. But this is not the conclusion explicitly argued for, which is the *identity* of opposing normative predicates. See Austin, 1986, p. 120. These arguments seem to be presented not as arguing for a certain meta-ethical thesis, but as tools to be applied in whatever manner the speaker finds useful, whether convincing an audience of a certain point, or refuting one who holds an opposing view.

13. Sprague, 1972, p. 287 translates καὶ τῷ ἀπολογουμένῳ ὡς γε ὁ λόγος as 'And the same argument is used by a man defending himself against such a charge.' But, even if the recognition of the relativity of truth and falsity could help one devise an effective defense, would a sophist ever go so far as to claim that direct appeals to the relativity of truth and falsity are effective in convincing a jury of the falsity of an accusation?
14. Cf. Pseudo-Aristotle *MXG* 6 980b1-5, in which Gorgias is reported to have argued that one person cannot through *logos* communicate to another what the first has seen, for *logoi* which are spoken are sounds, and hence cannot convey what is seen. See Mansfeld, 1985, p. 254: '[I]n order to receive the knowledge which A tries to impart B should now see what A has seen. It is true that B hears what A tells him, his ears hearing the sounds, but he cannot hear the colours, that is cannot *hear* what B has seen. A, the speaker (ὁ λέγων), speaks, but what he speaks – his *logos* – cannot be seen because it is neither colour nor thing.' Here too the *logos* is identified with the words making it up, where these words are understood as assemblages of phonetic content.

15. This marks a decisive divergence from the thought of Protagoras, for whom the true *logos* is not necessarily the one that corresponds to how things are, but the one that corresponds to how things appear. See Levi, 1940, p. 297.
16. Compare roughly the same point made by Gorgias *Pal.* 35: 'If then, by means of words (*logoi*), it were possible for the truth of actions to become free from doubt [and] clear to hearers, judgement would now be easy from what has been said. But since this is not the case, protect my body, wait for a longer while, and make your decision with truth.' (tr. G. Kennedy, in Sprague, 1972, p. 62). On this, see Kerferd, 1981, p. 81. Long, 1984, p. 327 remarks on the irony of this passage: Palamades employs his *logos* to argue for his innocence, by appealing to the fact that *logoi* cannot prove innocence or guilt. (Likewise, the author of *DL* employs his *logos* to argue that one cannot determine the truth of a matter on the basis of any *logos*.) As Robinson, 1979, p. 191 points out, another parallel is Plato *Tht.* 201b7-c7, in which Socrates points out that true belief concerning a defendant's innocence or guilt need not be knowledge, for it can come about through the clever *logoi* of the sophist, in the absence of the appropriate evidence. Oddly, Theaetetus' suggestion is that it is precisely a *logos* that is required for the defendant's *logos* to be known to be true. Plato is here toying with the ambiguity of the term '*logos*,' an ambiguity that is at the center of the remainder of the dialogue.
17. I follow Robinson, 1979, p. 192 in so understanding αἱ λέγομεν; this brings into sharper focus the main philosophical point being made in this line. Since the *logoi* are said simultaneously, either they all correspond to the world or they all do not. The author may have another point in mind, as well. A chorus of voices speaking in unison has a kind of phenomenological unity; it sounds as though just one *logos* is being uttered. But even this single *logos* can be shown to be both true and false, if only some of those uttering it are in fact initiates.
18. I accept the understanding of Zeno's paradox of likeness and unlikeness, and its Socratic solution, presented in Allen, 1983, pp. 67-91. '... Zeno's paradox follows from a primitive nominalism that identifies meaning and naming in such a way that the *meaning* of a term is identified with the subject it is *true of*. Plurality implies that the same things must be both like and unlike; if the same things are both like and unlike, the opposites likeness and unlikeness are identical; this is impossible; therefore, there is no plurality ... Socrates, with the theory of Ideas, corrects the guilty assumption by distinguishing characteristics from things characterized. Zeno's paradox, then, is a special case applied to opposites of a more general failure to distinguish characters from things characterized' (p.

- 79). On my interpretation of the *DL*, all of the puzzles of the first halves of Chapters 1-4 are of this kind.
19. Also, at *Euthd.* 301a, when Dionysodorus asks Socrates whether beautiful things were the same as 'the beautiful,' Socrates responds that they were different, insofar as to each beautiful thing *πάρεστιν κάλλος τι*, to which Dionysodorus responds that, by this logic, when Socrates comes in the presence of an ox, he is an ox *Ἐανοῦν παραγένται σοι βοῦς, βοῦς εἶ*. This indicates that Socrates employs *παρουσία* with a metaphysical, metaphorical sense, by which the term denotes the participation of a particular in a characteristic or Form, however this relation is to be construed. On this, see Sprague, 1967, pp. 91-8.
 20. See Diels-Kranz, 1964, p. 405, n. 1; Taylor, 1911, reprinted 1987; Guthrie, 1971, p. 316; Robinson, 1979, pp. 34-41.
 21. Kranz, 1937, pp. 225-6; Taylor, 1911, pp. 109-110; Robinson, 1979, pp. 192-3.
 22. Frege, 1984, p. 384. Frege takes the thought expressed by a sentence employing the indexical 'I' to be untranslatable into a sentence free of indexicals, since the thought corresponding to 'I' is unique to the speaker (pp. 358-60).
 23. Russell, 1903, p. 47, 'A proposition, unless it happens to be linguistic, does not itself contain words; it contains the entities indicated by words.' See also pp. 48-9.
 24. Russell himself did not fully discuss the question of 'egocentric expressions' until *An Inquiry into Meaning and Truth* (Russell, 1940). By the time of the writing of this work he had long since rejected this view of propositions as extralinguistic entities, and had taken a behavioristic line in approaching the question of how two different sentences can have the same significance (pp. 175-84). The problem of egocentric expressions is rather approached on the basis of a fundamental distinction between what a declarative sentence asserts and what it expresses. A sentence 'states' or 'indicates' a fact, a feature of the world. It also expresses the internal state of the speaker, be it belief, emotion, or other psychological state (pp. 19, 194-202). The fact asserted by a sentence employing an egocentric expression can always be asserted without the use of such expression, and would be most perspicaciously asserted in this way. This would prevent two facts being asserted by the same sentence (such as 'I am an initiate'). The egocentric expression has a part to play in what a sentence *expresses*: it points to a certain causal relationship (internal to the speaker) between the fact indicated and the speaking of the sentence

that indicates the fact (pp. 102-9). Russell takes asserting (or 'indicating') and expressing, along with the attempt to alter the behavior of others, as distinct *purposes* played by a sentence (p. 194). He is here moving towards the realization that the problem of indexicals is best approached by taking the speaking of a sentence to involve more than the brute assertion of a fact; to understand the speaking of a sentence, one needs to take account of the speaker and what he or she intends to do by speaking.

25. Ayer, 1954, pp. 8-9.
26. Ayer, 1954, pp. 12-13, 186-7.
27. Ayer, 1954, pp. 16-17, 187.
28. Ayer goes on to argue that occasions are ontologically otiose; we can consider the world as made up of situations alone. He would argue that theoretically one can give an account of why one statement is true and the other is false by appealing only to situations. But this does not have bearing on the present issue.
29. On the fact that Aristotle does not share the Russellian aversion to 'occasion sentences,' see Hintikka, 1967, pp. 1-14.
30. On the Receptacle as a 'form-bare particular' see McPherran, 1988, pp. 527-53.
31. I accept the account of the ontology of the *Categories* that is developed in Code, 1986, pp. 411-39.
32. See Ackrill, 1963, pp. 78-9; Smith, 1997, pp. 74-6.
33. Aristotle tells us that the puzzle that arises in the case of *logos* can also be raised in the case of belief, and it is to be solved in the same way. In regard to the present passage, the two cases are indeed parallel, and I restrict myself to the case of *logos*.
34. Crivelli, 1999, pp. 37-42 presents a convincing argument that it is the particular utterance, and not something like a sentence-type that is the subject of truth or falsity.
35. The interpretation that I present is that of Waitz, 1846, p. 1. Tricot, 1950, pp. 100-1 n. 2, claims to be following Waitz, but presents a different interpretation, according to which the written entity that is false is not the same one which, when written, was true. The interpretation is not grounded in the text; Aristotle does not show any indication that he denies that the *logos* 'Socrates is sitting' maintains its identity. On these problems with Tricot's account, see L. Dorion, 1995, pp. 356-7. Dorion, too, claims to follow Waitz, but presents a complex interpretation that is

also not grounded in the text. According to Dorion, τοιόνδε here refers not to a quality of a substance (as it normally does) but to a *state-of-affairs*. He takes Aristotle's point to be that truth and falsehood inhere in states-of-affairs, not substances, and that it is therefore states-of-affairs to which the principle of noncontradiction applies. A substance can admit contraries, but a state-of-affairs cannot. Hence a *logos* that signifies a state-of-affairs is not at the same time true *and* false. The same *logos* is at one time true and at another time false, but this does not involve a violation of the principle of noncontradiction. 'Contrairement à ce qui était le cas pour la substance, un seul et même état de fait ne peut faire en sorte qu'un jugement soit à la fois vrai et faux; celui-ci ne pourra en effet être que vrai *ou* faux' (Dorion, 1995, pp. 356-7). This interpretation has several weaknesses. First, it has the aporia rest on the notion that a *logos* signifies the substance, such as Socrates, that is its subject. But Aristotle does not say that the problem comes from taking a *logos* to signify a substance; rather it is said to come from taking the phrases 'being a true *logos*' or 'being a false *logos*' τὸ ψευδῆ ἢ ἀληθῆ λόγον εἶναι as referring to a substance. Further, Dorion must give an unorthodox sense to τοιόνδε.

36. Within the *Categories* 'man' and 'ox' are presented as examples of substances, but nowhere in the *Categories* does Aristotle give a clear test for determining which things are substances and which are not.
37. See *DA* II.8, 420b11-14: ἀέρος κίνησις τίς ἐστιν ψόφος ... φωνῆ δ' ἐστὶ ζῶου ψόφος, καὶ οὐ τῷ τυχόντι μορίῳ.
38. Simplicius, 1907, p. IIS.15-25 remarks that we have here an instance in which the two *logoi* ('X sits' spoken earlier and 'X sits' spoken later) are the same not in number but in *eidos* alone. However, he does not account for the lack of numerical identity by pointing to the use of indexicals. Rather, he indicates that a *logos* is an evanescent action, not a persistent substrate, like an *ousia*. 'For a *logos* is among the things that are moving through a process κατὰ διέξοδον, and this is why it is not among the things that have a settled place (θέσις). It follows that the *logos* that was previously said (the true one) comes to be the same in *eidos* as the second (the false one), but it is not the same in number, as is said to be the case for *ousia*' (II. 21-4). Simplicius does not say whether the feature that is responsible for the sameness of form is sameness in wording, meaning, or something else. See also Ackrill, 1963, pp. 90-1: 'Aristotle might have argued that the alleged counter-examples, individual statements or belief which change their truth value, fail, because my statement now that Callias is sitting and my statement

later that Callias is sitting are not the same *individual* statement even if they are the *same statement* (just as 'a' and 'a' are two individual instances of the same letter). Thus they are not examples of the very same individual admitting contraries. Alternatively, Aristotle could have denied that the statement made by 'Callias is sitting' when uttered at one time *is the same statement* as that made by 'Callias is sitting' when uttered at another time. The sameness of a statement or belief is not guaranteed by the sameness of the words in which it is expressed; the time and place of utterance and other contextual features must be taken into account: Ackrill's first point is similar to that of Simplicius, although, unlike Simplicius, he provides no ontological account of a *logos* that explains *why* we are to deny the existence of a single *logos* as persistent substrate. His second point seems to follow from a Fregean understanding of indexicals.

39. On the priority of being to truth, see Williams, 1991, pp. 305-12.
40. Geach, 1969, pp. 66, 71-2. Other examples of Aristotle's recognition of the distinction between Cambridge change and true change are discussed in Williams, 1989, pp. 41-57. On Aristotle's diagnosis of change in truth value as a Cambridge change, see Williams, 1991, p. 307 and Crivelli, pp. 45-54. Dexippus takes this diagnosis to be the core of Aristotle's response (Dexippus, 1885, p. 60.1-23; Dillon, 1990, p. 109). He compares a change in respect to truth value to A's change in respect to being to the right or left of B, on account of the motion of B, not A. Simplicius' account of the puzzle to which Aristotle is responding is nearly identical in wording to that of Dexippus; he is copying either from Dexippus or from a common source (Dillon, 1990, pp. 108-9). He too thinks that the problem of change in truth value is to be solved by showing that this sort of change, like change in respect to being to the right or left, does not involve change in the *logos* itself (Dillon, 1990, p. 119). Unlike Dexippus, he analyzes change in truth value as a mere Cambridge change in order to interpret 4b4-18, in which Aristotle presents an alternative solution to the puzzle by noting that *logoi* do not admit contraries at all. Simplicius takes this to mean that *logoi* do not admit contraries in the right manner, namely, in the manner of *πάσχειν*, for that which undergoes a mere Cambridge change is not subject to *πάσχειν*. In my view, the analysis of change in truth value as a mere Cambridge change is at the bottom of Aristotle's first solution to the puzzle in *Categories* 5 (4a28-b5), to the effect that the *logoi* do not change at all. While Simplicius takes Aristotle's first solution to rest on the fact that *logoi* are not persisting substrates at all, I take this to be rather the crux of the second solution.

41. Russell, 1903, p. 443.
42. I therefore disagree with Williams, 1991, p. 311 who writes, 'Aristotle might have been content to talk of a statement (λόγος) which was not said by a particular person, but he would have been unhappy with the idea of a belief (δόξα) which was not what some person or persons believed.' I see no reason why statements and beliefs should not have parallel ontological analyses.
43. Simplicius, 1907, p. 118.21-25.
44. Such an analysis holds whether the nonsubstantial attribute or action said to be changing is taken to be a particular or universal. Cf. Owen, 1986, p. 257, in which Owen imagines an objection to his view that the color that is inherent in A is a universal, the same as the color in B: '[S]omeone might point out that A's colour (or size, or whatever) can change without any change in B's, however . . . all that is said is that A can change colour, that from having one determinate colour it can come to have another.' Also cf. Matthews and Cohen, 1968, p. 651: 'For the color of Felix to undergo change is nothing more nor less than for Felix to undergo a change in color -to be, say, now light grey and later dark grey, or now white and later black.'
45. Owen, 1986, pp. 252-8.
46. See n. 38.
47. It is worth keeping in mind here that Aristotle nowhere grants to any instant, present or otherwise, any existence apart from the actions that occur within it. Since time is a number of motion, the instant, which is that which bounds time (*Ph.* IV.1, 219a28), is determined by certain limits of actions, not vice versa. Accordingly, to understand a predication in the present tense as involving an implicit indexical temporal qualifier reverses the order of conceptual priority that Aristotle takes to hold. Aristotle would understand any use of the present tense (that is not an instance of what Owen calls the 'timeless present'; see Owen, 1986, pp. 27-44) as a kind of indexical, but not as pointing to one of a number of instants ordered in a B-series. The issue of Aristotle's understanding of the present tense is too complex to begin to discuss here; see Waterlow, 1983, pp. 104-28.
48. See Hintikka, 1967, p. 3: 'Aristotle would apparently have accepted the doctrine that the sentence "It is raining" is made true or false by different sets of facts accordingly as it is uttered today or yesterday. However, he would not have been worried about the consequence that one and the same sentence may be true at one time and false at another. He would

have rejected the notion of a proposition and would have stuck instead to the actual thought of the people who uttered the sentence on the two occasions. When doing so, he would have been willing to argue that the thought expressed by the sentence today and yesterday is one and the same.' See also Hintikka, 1967, pp. 10-11: '[T]he idea that spoken words are symbols for unspoken thoughts encourages the idea that one and the same temporally indefinite form of words expresses one and the same belief or opinion at the different times when it is uttered.' I agree with Hintikka on this, except that I believe the sequence of alternative solutions to the sophistic puzzle of change in truth value shows that Aristotle was indeed quite worried by the consequence that one and the same *logos* is both true and false.

49. Wittgenstein, 1969, pp. 108-9.
50. Kaplan, 1990, p. 24.
51. Kaplan, 1990, pp. 37-8.
52. Perry, 1990, pp. 66-8; and 1993, pp. 21-3, 72-5.
53. I would hesitate to employ the term 'speech act' for this sort of action, since this term is usually used in respect to whole communications such as sentences, or groups of sentences (what Aristotle would call *logoi*), not their parts. For Aristotle the parts of *logoi*, namely nouns or verbs, are also significant (*Int.* 2, 16a 19, b26). To say even a word as part of a longer *logos* is in itself an instance of the human activity of speech.

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