Zeno’s Boêtheia Τῶι Λογῶι: Thought Problems about Problems for Thought

PHIL HOPKINS
Southwestern University

Abstract: This essay addresses two central issues that continue to trouble interpretation of Zeno’s paradoxes: 1) their solution, and 2) their place in the history of philosophy. I offer an account of Zeno’s work as pointing to an inevitable paradox generated by our ways of thinking and speaking about things, especially about things as existing in the continua of space and time. In so doing, I connect Zeno’s arguments to Parmenides’ critique of “naming” in Fragment 8, an approach that I believe adds considerably to our understanding of both Zeno’s puzzles and this enigmatic aspect of Parmenides’ thought.

The chief objection against all abstract reasonings is derived from the ideas of space and time; ideas, which, in common life and to a careless view, are very clear and intelligible, but when they pass through the scrutiny of the profound sciences (and they are the chief object of these sciences) afford principles, which seem full of absurdity and contradiction. No priestly dogmas, invented on purpose to tame and subdue the rebellious reason of mankind, ever shocked common sense more than the doctrine of the infinite divisibility of extension, with its consequences; as they are pompously displayed by all geometers and metaphysicians, with a kind of triumph and exultation. A real quantity, infinitely less than any finite quantity, containing quantities infinitely less than itself, and so on in infinitum; this is an edifice so bold and prodigious, that it is too weighty for any pretended demonstration to support, because it shocks the clearest and most natural principles of human reason.

—David Hume, Enquiry, XII, ii
Then we’ve now given a complete statement of our confusion. But there’s now hope, precisely because both that which is and that which is not are involved in equal confusion.

—Plato, *Sophist*, 250d

It is not possible to obtain true knowledge of the things that are, but only to make distinctions as is customary.

—Ecphantus of Syracuse, fifth century B.C.E.

It is indeed an exacting requirement to have to ascribe physical reality to space in general, and especially to empty space. Time and again since remotest times philosophers have resisted such a presumption.

—Albert Einstein, *Relativity*

I

The paradoxes of Zeno continue to present the same two basic problems: 1) their solution, and 2) their place in the history of philosophy. Plato established the standard interpretation for the second problem in the *Parmenides* where he had Socrates suggest and Zeno admit that the paradoxes were intended to refute the critics of Parmenides. Plato’s Zeno says there:

Indeed, the truth is that the book comes to the aid of Parmenides’ ideas [βοήθειά τις ταύτα τὰ γράμματα τῷ Παρμενίδου λόγῳ] against those who attempt to ridicule them by claiming that, if it is one, his statements suffer many absurdities and contradict themselves. Accordingly, my book speaks against those who assert the many and pays them back in kind and more, wishing to make clear that their hypothesis, if it is many, would, if someone examined the matter sufficiently, suffer consequences even more absurd than those suffered by the hypothesis of its being one. (128d)¹

Scholarship has largely followed the tradition set by Plato and Aristotle, treating the paradoxes as arguments against plurality.² Aristotle was the first to attempt to “solve” the paradoxes by locating their “flaws.” More recently, A. N. Whitehead suggested that at least “elements” in the paradoxes were the product of “inadequate mathematical knowledge,” but he also thought that “a valid argument remains after the removal of the invalid parts.”³ He and Russell, who thought the paradoxes immeasurably subtle and profound,⁴ gave impetus to a second strain of interpretation that attempts to locate their mechanisms and solve the paradoxes through various mathematical strategies.⁵ Both strains recognize that the paradoxes pose substantial difficulties to conceptions
of space and time. Gilbert Ryle has suggested that Zeno’s “Achilles” paradox deserves to rank as the paradigm of a philosophical puzzle. In agreement with Ryle, I will argue that Zeno’s paradoxes do indeed merit such status, not because they present problems to thinking about X, that is some particular object of thought such as plurality, but because they present thinking itself as problematic. Therefore, any attempt to resolve the paradoxes must ultimately fail, and fail to show their primary importance for philosophical thought. In this essay, I will place Zeno’s paradoxes in a different relation to Parmenides than does Plato or the standard interpretations, a relation grounded in Parmenides’ discussion of “mortal naming.” Doing so not only offers a different and, I hope, more satisfying interpretation of the paradoxes, but also freshly illuminates Parmenides’ still puzzling discussion of naming. Indeed, I will argue that the paradoxes, taken as a whole, as even Socrates wished to take them, are intended to develop and illuminate precisely that aspect of Parmenides’ thought. In the process, I hope to sharpen the insights both thinkers offer into the heuristics of enigma displayed by the structures of thought and language. Like others who have engaged Zeno’s puzzles through the years, my aims in this paper extend beyond historical and exegetical interests. Zeno’s fragments are notoriously elliptical, so much so that arguing decidedly for one interpretation over another on historical or philological grounds is exceedingly difficult. Given the unusually fragmentary nature of Zeno’s texts, interpretations of his work cannot rise above a significant level of uncertainty. My interpretation offers one possible reading which I believe has been insufficiently considered in the scholarship that engages these early thinkers. Primarily, however, I wish to bring Zeno’s paradoxes to bear in fresh ways upon our own habits of concept formation and basic language practices regardless of his intentions for his arguments—intentions to which, despite Plato’s proffering, we have very little access.

II

The Question of Intent. If the paradoxes are intended to support Parmenides’ ideas, as Plato has Zeno state—that it is one, continuous, and motionless—they offer rather narrow support for the ideas presented in Parmenides’ poem as a whole, and not terribly pointed support with respect to these specific claims. Their narrowness presents no argument against them or the standard interpretation, although I hope to show that the paradoxes are intended to engage Parmenides’ ideas much more broadly than has been generally supposed; but their lack of
focus is problematic. Many have noted that several fragments present as much difficulty to monism as to pluralism. Aristotle was the first to do so, claiming that on Zeno’s own principles, if the one is indivisible then it is nothing.10

Simplicius expresses a similar conclusion concerning 29B1 and B2, which he relates thus:

But if it exists, it is necessary for each thing to have some size and thickness, and part of it must be apart from the rest. And the same account holds concerning the part that is in front. For that too will have size and part of it will be in front. Now it is the same thing to say this once and to keep saying it forever [ὁμοιωμένη δὴ τὸ τοῦτο ἀπαξεῖν καὶ ἀεὶ λέγειν]. For no such part of it will be last, nor will there be one part not related to another. Therefore, if there are many things, it is necessary that they be both small and large; so small as not to have size, but so large as to be unlimited.11

For if it were added to something else that exists, it would not make it any larger. For if it were of no size but were added, it cannot increase in size. And thus what was added would in fact be nothing. But if when it is subtracted, the other thing is no smaller, nor is it increased when it is added, clearly what was added or subtracted is nothing.12

Simplicius immediately follows his quote of B2 with this apology: “And Zeno says this, not by way of abolishing the one.” His apology seems to recognize the possibility that the puzzles Zeno offers may do some damage to Parmenides’ claim of unity. Earlier in the commentary, he offers a sharper expression of his confusion:

Zeno’s argument in this passage seems to be different from the one in his book to which Plato refers in the Parmenides. For there, arguing in support of Parmenides’ monism from the opposite point of view, he shows that there is no plurality; but here, as Eudemus says, he both does away with the one (for he speaks of the point as the one), and allows the existence of plurality.13

There was a sense early in the tradition that Zeno intended to create arguments on “both sides,” to make puzzles wherever he might.14 Such intent was a recurring element of rhetorical and investigative practice in the fifth century. Most of his contemporaries and other ancient commentators recognized that all Zeno’s paradoxes assault common sense, but each interpreted the assault idiosyncratically.

Protagoras received Zeno’s work as impetus for his own practices of constructing arguments on “both sides” of any question. Melissus and the Atomists, and possibly Anaxagoras as well, reacted to Zeno’s para-
doxes by focusing on the status of physical minima. Plato focused on the issue of unity; but even in the *Parmenides*, where Zeno’s intention is reported with respect to this issue, Plato has his characters engage in enigmatic arguments very much reflective of Zeno’s method rather than congenial to his supposed point. Aristotle engaged Zeno the most directly and widely, but he focused on the issue of infinity. This range of responses, on its face, demonstrates that a number of interpretations of the paradoxes are viable. Each thinker chose to concentrate on issues most closely related to his own research agenda. These particular issues do not exhaust the paradoxes; and, more importantly, they are not easily reduced to a single intention.

However, even Plato’s testimony as to intent isn’t as univocal as it is often taken to be. In the fragment quoted above, Plato has Zeno assert his loyalty to, and aid for, the *logos* of Parmenides in a general sense, not specifically to the doctrine of unity. Just prior to this passage, Socrates summarizes Zeno’s arguments several times in slightly different formulations, all ascribing to Zeno’s arguments a focused attack on plurality. Socrates then concludes that Zeno has written the “same thing” as Parmenides, but by means of denying the alternative. Where Parmenides offers “splendid and excellent proofs” that “the all is one,” Zeno offers a “vast array of very grand proofs” that “it is not many.”

At this point, however, Zeno warns Socrates that he hasn’t completely discerned the truth about his book, offering the correction quoted above. In it, he does not claim, either by means of his puzzles or directly, to establish the truth of “it is one,” or of any doctrine. He does not argue that many absurdities and contradictions do not, after all, follow from claiming that “it is one.” He merely promises to produce even more absurdities and contradictions from the claim “it is many.” He in no way indicates that “even more absurdities” flow directly from the nature of the claim “it is many,” merely that he produces more.

Many modern commentators wish to find in Zeno’s exercises an early example of indirect proof. Socrates’ characterization of the arguments certainly bolsters that interpretation. However, Plato has Zeno interrupt Socrates precisely on that point, and suggest that Socrates’ understanding of both his goal and method is imperfect. While this dramatic interplay does not offer sufficient proof against the interpretation that Zeno provides arguments *ad absurdum* or *ad impossibile* to establish the “truth” of “it is one,” it certainly raises grounds for some caution in that interpretation, and should be considered as carefully as Socrates’ explicit characterization as evidence of what Plato thought they might be up to.
We should not overlook Socrates’ other important characterization of Zeno in the *Phaedrus* (261d), where he refers to Zeno as the “Eleatic Palamedes,” able to make his readers or auditors “perceive the same things to be *both* similar and dissimilar, *both* one and many, *both* at rest and also in motion” (emphasis added). He immediately follows this characterization with the observation that one single practice—that of speaking on opposite sides—must, therefore, govern all speaking. While enigmatic, this claim, and the characterization preceding it, offer significant support for an interpretation of Zeno’s practice and purpose, in accord with ancient interpretations mentioned above, as seeking to create puzzles that illuminate the nature of speaking or thinking more generally, rather than merely arguing, indirectly, for the claim that “it is one.” By means of the single practice that governs all speaking, Socrates continues, one can manipulate the process of distinguishing and associating as one sees fit, and disguise the fact that one is doing so. As the Eleatic Stranger makes clear in the *Sophist*, an essential element of speaking is the process of making distinctions. This much Parmenides tells us in his poem.

III

*Parmenides’ Claim(s).* Parmenides’ poem primarily investigates what can and can’t be said and/or thought.\(^{18}\) A discussion of the practice of “naming” is therefore integral to the central theme of the poem, as even its place in the text demonstrates. B8 is almost exclusively about how \(\epsilon\sigma\tau\iota\) may be signified or marked (\(\sigma\eta\mu\alpha\iota\nu\omega\)). Further, Parmenides, himself, experiences some difficulty in naming, or assigning attributes to \(\epsilon\sigma\tau\iota\).\(^{19}\) Even a cursory examination of B8 reveals that unity is, ironically, but one of many characteristics that may be asserted of \(\tau\delta\ \epsilon\omicron\omicron\upsilon\nu\)—one which is in no way marked as more important than the others—offered as “signs along the way” of the single account that remains. They are many and strange signs indeed, counterintuitive and even baffling—that there is no coming into being nor destruction, for it is whole and not divisible, all together and all alike by itself, one, continuous, without motion and without end, unchanging and uniform in the limits of mighty bonds, like a ball evenly balanced in every way from the middle, not greater or smaller here than there, equal to itself on all sides.\(^{20}\)

Indeed, there is a distinct pluralism that drives Parmenides’ poem. In the matter of what can be said and thought, his concern is to repudiate “it is not” and to purify our reasoning from perceptions and experiences that would lead us erroneously to countenance “it is” and
“it is not” together; for this is the way of all error upon which mortals travel, two-headed, perplexed, blind. In doing so, he helps to establish a more pervasive and problematic dualism in the question of the relation of appearance and reality, one that haunts philosophical inquiry throughout its history. His poem is explicitly structured to explore that opposition, and the problem of “naming” presents the troubling dynamic of appearances and their relation to what is in its sharpest aspect. The goal then, and it is a difficult goal, as the Eleatic Stranger professes in the *Sophist*, is to understand Being and Not-Being correctly, since, as the Eleatic Stranger also suggests, we may not understand either one as well as we suppose ourselves to."

Indeed, it is what Parmenides describes as the cause of this mortal perplexity and even blindness that connects most directly with the perplexity presented us by Zeno’s paradoxes. The poem lays a great deal of the onus for the error of the path of *Doxa* at the feet of what the goddess calls “mortal naming.” Such a move is suggestive and provocative, prompting and participating in the inquiry into and fascination with the nature of language that drove much early philosophical and Sophistic thought and practice, and playing an important role in the development of Platonic and Aristotelian metaphysics and epistemology.

Thinking and the thought that it is are the same.
For not without what is, in which it is expressed,
will you find thinking . . .
. . . wherefore it has been named all names
mortals have established, persuaded that they are true—
to come to be and to perish, to be and not <to be>,
and to change place and alter bright color. (28B8.34–41)

At this point I stop for you my reliable account and thought concerning Truth; from here on, learn mortal opinions, listening to the deceitful ordering of my words.
For they made up their minds to name two forms,
not one of which is it right to name—in this they have gone astray—and they distinguished opposites in form, and established signs apart from one another. (28B8.50–56)

Parmenides’ critique of human naming is difficult to interpret, not least because of the difficulty of his syntax; but central to that critique is the assertion that naming establishes two forms. Naming necessarily and inevitably makes distinctions, and this creates some problems. Furley and others have argued forcefully and successfully, I believe, that the fundamental critique at work in this passage is that Being (the
only object to which any name may really apply) is wrongly named by any naming; primarily because naming divides what is, in some very important sense, a unity.\textsuperscript{25} I believe that Parmenides does not assert the problem to be primarily the \textit{plurality} inherent in naming, but the contrariety of the particular two forms that are established by all naming. Furley argues to this conclusion:

I believe the logic of this fragment is something like this. Once we have set up \textit{contrary} forms, for example, light and night, we cannot say “there is light here and now” without entailing “there is not night here and now”; and this last proposition is to assert a bit of not-being or ‘nothing’ of night. Mortals refuse to recognize this: they name their two forms as if they both \textit{are} in the full sense, without any share of not-being.\textsuperscript{26}

Parmenides puts it thus:

— in this they have gone astray—

and they distinguished opposites in form, and established signs apart from one another—for one, the aetherial fire of flame, mild, very light, the same as itself in every direction, but not the same as the other; but that other one, in itself is opposite—dark night, a dense and heavy body. (28B8.54–59)

No problem would be removed if we were to abandon ‘night’ and only name ‘day,’ or if we were to abandon ‘light’ and only name ‘dark,’ or vice-versa. The problem Parmenides is concerned with occurs \textit{as soon as} we name \textit{any single thing}. To name ‘day’ is already to name its opposite: ‘not-day.’ There is an implicit and immediate assertion of not-being as soon as \textit{anything} is named.\textsuperscript{27} We might as well, and according to Parmenides, usually do, assign to each such binary its own positive name and establish it as a polar relation. This move at least disguises the assertion of not-being; but it creates the problem with which Parmenides and other early thinkers are concerned.\textsuperscript{28} His description of mortals, “for whom to be and not to be are the same and not the same” (B6.8–9), is a description of anyone who names anything. Parmenides claims that mortal νόσ is led astray by a wandering (πλακτός) that occurs between the illusory poles of naming’s inevitable dichotomy.

This aspect of naming points to one of the most important problems with Parmenides’ own practice of naming: his claim that “it is one.” Any serious claim that reality is absolutely unitary is \textit{eo ipso} very difficult to advance: to say that \textit{only τὸ ἑώς} is, is to be at least linguistically supplemental to the Being that is thereby asserted to be all there is. Therefore, it would seem, there are at least two things rather than one—Being
and its expression. Or, if not, if all names point at the same thing and point at themselves, they don’t point at all. The Eleatic Stranger makes good sport of this problem. Further, if the problem of Not-Being occurs in all and any naming, then the problem occurs in the same way when Being is named. And yet, Parmenides insists that one must not, and therefore, hopefully, need not, travel the path that countenances Not-Being or conflates it with Being. Whatever the solution Parmenides might propose, it is not to abandon naming or saying. Thought and Being are one and the same, he tells us several times. And there is, in Being, already expression.

IV

The Mechanics of Paradox. It is in the Parmenides, the dialogue in which Socrates offers his interpretation of Zeno’s paradoxes that so influenced later thought about them, that Plato invents an argument strikingly similar to the problem we have just noted. In it, he shows that the One is really many, if, indeed, it is at all; the opposite of what Zeno is supposed to be showing. He argues that if the One exists, it partakes of being, and is therefore two: One and Being. Further, each of these are, and are one thing, and so they also are two, and so on. Aristotle takes up this paradox as well, in Metaphysics 1001a29: “But if there is to be an absolute Being and an absolute Unity, it is extremely difficult to see how there will be anything else besides; how, I mean, existing things can be more than one.” It would appear that, on the grounds of Parmenides’ claim of unity taken in its strong form, one may claim both that there must be only one thing and also that there must be many things, a conclusion again quite reminiscent of Zeno’s arguments in B1 and B2. There is a similarity of mechanism in these arguments that connects them to Zeno’s paradoxes. They turn on the problems inherent in a kind of conceptual iteration, not primarily a geometrical or mathematical iteration, which is the source of an “infinity” that seems to drive the paradoxes.

These arguments, and others like them, are gathered by Jorge Luis Borges, whose essay first suggested to me a certain hastiness of the typical (and my own previous) assessment of Zeno’s connection to Parmenides. As I pondered the matrix that Borges presented and recalled other instances of this mechanism, I soon came to see that Zeno’s paradoxes present a profound interpretation of Parmenides’ conception of the nature and problematics of language. Borges remarks Lewis Carroll’s interesting engagement with the “Achilles” paradox; but he leaves it a permutation only of the mechanism he wishes to note and
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does not take it as far as I believe Carroll intended it to go. Carroll offers, in a classic and delightful essay, an interpretation of the Achilles paradox that sheds light on the relation of Zeno’s paradoxes to the inherent paradoxes of thought and speaking. Zeno’s paradoxes are, after all, what we might today call thought experiments. In no way can one test Zeno’s arguments by actually shooting an arrow or running a race. Everyone knows what will happen if the experiments are tried. The difficulties only occur when we keep the experiment in our thinking and explore the relations of our conceptions. It is in this sense that they are paradigmatic philosophical puzzles.

In Carroll’s version, at the end of the race, Achilles proudly reveals to the Tortoise how he was able to defeat both him and the paradox. Even though the race covered an infinite number of distances, the distances were constantly decreasing. The clever tortoise responds by offering, I believe, to teach Achilles a lesson about whether he has indeed understood the paradox. Although a mathematician, Carroll does not offer a lesson on the differences between infinite and finite series. Carroll offers through the tortoise a version of the paradox that gets at the very heart of the nature of thought itself. The tortoise proposes to Achilles that there is another race that almost everyone supposes can be accomplished in two or three steps, but which, in fact, consists of an infinite and progressively increasing number of steps. He presents to Achilles the syllogism. Any syllogism would do, but the tortoise proffers one derived from Euclid’s first proposition, and he shows that between the minor premise and the conclusion, of any syllogism, an implicit hypothetical premise of the form “If major premise and minor premise, then conclusion” necessarily interposes. This new premise is not actually a terminal minor premise, but only the temporary penultimate to the new hypothetical it occasions, and so on. Each new hypothetical comes into existence the moment the prior hypothetical asserts itself. No matter how willing one may be to accept and affirm each new hypothetical, she will never pass over them to the firm and logical conviction of the conclusion.

One of the more important elements of this illustration is the manner in which an infinite number of intercalating hypotheticals pop into existence the moment one wishes to connect two independent premises into a movement of thought. Here is an interesting problem with motion, but not the motion of arrows or runners. The lesson of the Tortoise’s paradox is that one is always underway, always in between hypothesis and conclusion—a position that is in no way absurd, just deeply troubling to anyone who would like the rules of reasoning, or at least of discursive reasoning, to lead more directly where they have usually been supposed
to lead. One may not be able to get there, epistemically, from here. Or, one may already be there, as Socrates incredibly claims to Meno.\textsuperscript{35}

The tortoise’s treatment of syllogism is quite interestingly juxtaposed against what Sextus Empiricus says in \textit{On Syllogisms}.\textsuperscript{36} He claims that the famous syllogism about Socrates’ mortality is problematic at its core since it begs the question. If we do not already know the conclusion, that Socrates is mortal, we have no way of knowing the truth of the major premise, that all men are mortal. Sextus claims that this is a difficulty in \textit{any} syllogistic chain of reasoning, and many have agreed with him since, granting that any deductive syllogism is necessarily limited to analytic unpacking. In other words, between the premise and the conclusion, there is \textit{no} distance.

So, the problem with syllogisms is that there is no distance between the premises and the conclusion, that is, the conclusion is always already contained in the premises; or there is an infinite distance, that is, if there is a difference between premise and conclusion, there is also an infinite number of tacit hypothetical premises that prevent one from ever moving from premise to conclusion. Looked at in this way, the problem with syllogisms begins to resemble quite closely the paradox of magnitude in Zeno’s argument in B1 and 2: that is, that there is either no magnitude, in which case there is nothing, or there is infinite magnitude for every thing that is, which is impossible, if there are many, and absurd, regardless.

\textbf{V}

\textit{The Paradox of Thinking and Saying.} Let us return to the first problem—how to solve these paradoxical puzzles—and offer a tentative answer: we don’t. Nothing is accomplished by their solution. Certainly, they are ‘solved’ as soon as someone races a tortoise or tries to cross a stadium or shoots an arrow. They present no difficulties to our actions. They present difficulties to our thinking about the world. If we linger with them, and with their difficulties, we may see that the real lessons they have to teach are contained in their paradoxicality, which points directly to the world of appearances thrown before us by our concepts and words.

Zeno’s arguments show, on their face, that using words can easily get us into difficulties. This was the common concern for a century and more of thinkers, from Parmenides through Thucydides and Gorgias to Plato and Aristotle. It is remarkable that so early in the process of thinking about words and the problems of language Zeno developed
arguments that call to the fore the ontological problems that our thought processes present to us: our deeply rooted tendencies to be ontologists of substance, to make things of whatever we conceive or speak. To be more specific, I believe that both Zeno and Parmenides are telling us that paradox occurs as soon as we are asked to engage the world by means of conception and naming, because in doing so we manufacture and manipulate conceptual entities. Once manufactured, operations upon them seem natural and there is no mechanism that can tell us the ultimate boundaries of those operations. Parmenides thinks that we are, in a manner often hidden from us, the kinds of thinkers who take that which we name and conceive to be things. We identify our experience by means of thinking and speaking, and what we identify we suppose to have identity. Parmenides makes this point with respect to opposites and opposition itself, which he thinks we misunderstand because we identify the poles of opposition as separate entities. We take the poles of a given spectrum to be binary dualities in opposition.37

I believe Zeno attempts to show us, in his paradoxes, that the same thing happens with respect to whatever relations we conceive or try to articulate and represent to ourselves. We are asked by the paradox of Achilles, for instance, to represent distance to ourselves and we seem unable or unwilling to do this without representing it as an entity. When we are then asked to divide it, we multiply the entities, and when we are asked to intercalate those into the original conception, we find the distance increasing, such that, because such mental operations need not have an end, the aggregate entity of distance that our mental operations present to us appears infinite, and motion, in this instance, becomes impossible or moot. Zeno says this explicitly in B3: “For there are always others between the things that are, and again others between those, and thus the things that are are unlimited.”

It doesn’t seem to matter how many times we are asked or are able to perform the same operation, except that the notion that we can keep doing so without end drives home the paradoxical aspect inherent in the very first operation. Zeno remarks this explicitly in B1: “It is the same thing to say this once and to go on saying it forever.” Indeed, the emphasis is on the saying. Because, as he recognized, it is in the saying that we provide our representation of the world with substance without thinking or noticing, and there, right there, the paradox is born. Owen has noted, in his discussion of Parmenides, that paradoxes result when properties of statements, such as tense, are taken to be properties of things.38 Zeno suggests that they result when properties of concepts
are transposed onto reality, or, rather, when reality, as a property, is attributed to concepts.

Perhaps a fuller analysis of a single such problem may serve to illustrate. Many, following Aristotle, have taken Zeno’s paradoxes to issue challenges to our notions of temporality. Newtonian, Relativity and Quantum physical theories all view both time and space as “dense.” Indeed, that is our ordinary consciousness of space and time, apparent in our inability to locate perfectly discrete moments of time or points of space, or to find the boundary between one moment and the next or one point and its neighbor except when those points or moments are separated by “containing” some object or experience. If time and space are dense, then there is no “next” moment, no discrete neighbor. Zeno’s paradoxes do not directly attack motion or time, nor deny their reality; they attack denseness as a conceptual property of our ideas about time and space. They attack the way we think about space and time.

The second antinomy in 29B3, the only unquestionably authentic fragment, turns on such a claim for denseness: “If there are many things, the things that are are unlimited; for there are always others between the things that are, and again others between those.” Here, Zeno requires us to conceive of space as dense, as we usually do, to reach his conclusion, for it is only in dense space that there are always infinitely many points between any two points. 29B1 and 2 treat objects as dense, in order to show that they are both nothing at all and infinite in size. The four arguments against motion that Aristotle relates in the Physics all turn upon treating space and time as dense, even the “Moving Rows,” since Zeno need not postulate a minimal, indivisible distance or time in order to bring off the paradox, merely requires that we recognize that moving past \( n \) bodies of size \( m \) will take half the time of moving past \( 2mn \) units at the same speed, a conclusion that only follows from considering both time and space to be dense.40

William James and Alfred North Whitehead, among others, attempted to refute Zeno by arguing that time is not dense, but discrete, demonstrated by the fact that ordinary events, as they happen, exhibit “nextness” or consecutiveness, which James called “growth.”41 It is precisely this idea of “growing,” of moving through time, that Zeno refutes. To pull off this refutation, he need not take any stance at all on whether events exhibit succession in fact or only in our consciousness of them. It is indeed quite plausible to suppose that the order of “nextness” is laid upon the world by us in our experience.42 If it were not, then we ought to be able to locate the boundaries separating one “event” from the one that is “next” in our experience of those events. Any such boundary is
completely arbitrary. Indeed, the difficulty of finding such a boundary fuels Zeno’s polemics. However, such a boundary *drawing* is essential if experience is to make sense. We cannot understand our experience except that we understand it to be temporal, that is, successive and consecutive. This is the heart of the paradoxes.

Clearly, we find any event happening at a given moment to be different, temporally, from events recognized as “prior.” Zeno sharply prompts us to consider where to “locate” those events closest to the one we identify as happening now. If we attempt to find them at some smallest possible remove, not only do we find it increasingly difficult, even impossible, to locate the boundaries of that smallest interval, but we do not find any normal awareness of it in our experience. Thus, when we investigate, philosophically, the matters his paradoxes present to us, in the normal course of what the Presocratics would call ἴστορία, we divide time in ways that become untenable as we attempt to isolate diminishing intervals. Yet we nevertheless cling to such a possibility as our only sensible frame for experience. This is not a problem with temporality; it is a problem with the conceptualization of experience.

Let us take the opposite tack for the sake of argument. Let us say that the coming into being or cessation of a continuous tone, for instance, is clear and discrete in our experience: the tone and the silence just before or after. There is a discrete moment \( t \) in which the tone is, and another \( t' \), right “next” to it, in which the tone isn’t.\(^{43}\) Zeno still haunts us under such an interpretation of experience. If these moments are discrete, how do we get from the one to the next? I do not mean how do we experience the consecutiveness of these moments which clearly exist in our *memory* as discrete and consecutive. I mean how does the being of the tone in reality cease; or, given silence in \( t \), how does the tone come into being in \( t' \)? From where? If tones can exist in \( t' \) but not \( t \), then, like the arrow occupying only its own space, how is the temporal distance, however infinitesimal, between \( t \) and \( t' \) bridged? Here we see that if we conceive of space and time as dense, Zeno abuses us; and if we conceive of space and time as discrete, he abuses us no less. Indeed, a moment’s reflection will show that we need to think of space and time as both dense *and* discrete in order to allow for normal experience of motion and growth, and, indeed, all perception. We, two-headed and confused mortals that we are according to Parmenides, seem to need to think and speak as if it is and is not, the same and not the same.
VI

Logos: Two-headed and double-tongued. The “Arrow” is instructive in this regard. Schofield reconstructs Aristotle’s analysis of the claims of this fragment’s arguments thus:44

1) Anything occupying a place just its own size is at rest.
2) In the present, what is moving occupies a place just its own size.

So 3) in the present, what is moving is at rest.

Now 4) what is moving always moves in the present.

So 5) what is moving is always—throughout its movement—at rest.

He believes that Aristotle objects to the inference from 3) and 4) to 5), conceiving of the “now” as an indivisible instant. The inference will be valid, then, only if we assume that a period of time is the sum of the indivisible instants within it.

The argument of this essay would insist that the problem occurs at 1). Let us examine how. First, we may ask what it would mean for an object not to occupy a space just its own size. The puzzlement occasioned by that question may prompt us to give 1) a clean bill. It is self-evident, and so acceptable, that an object occupies only its own space. Zeno, like Heraclitus, prompts us not to be so hasty about the obvious. The question, if we insist upon asking it, reveals the ambiguity of our conceptions of space. We think of space both as dense and as discrete. The space surrounding the arrow is dense, as we normally conceive it, and that is how we normally imagine motion to be possible. There is no physical boundary to be crossed by motion except the arbitrary and purely conceptual boundary of “place.” The space the arrow occupies is dense, thus every point of the arrow, also dense, as we suppose every object to be, coincides with its corresponding point of space, and this is how we may imagine an object to “occupy” its “place.”

But as Zeno asks in B5: “If place exists, where is it? For everything that exists is in a place. Therefore, place is in a place. This goes on to infinity. Therefore, place does not exist.” That Zeno, and we, can even ask where “place” is, or whether “place” has a place demonstrates our problematic habits of conceptual reification. There is something strange going on when, in our efforts to conceptualize the occupation of space, an abstraction like “place” becomes interchangeable with an object like an arrow. The issue is sharpened when we ask what the “this” is that Zeno suggests may go on to infinity. It would appear that what goes on to infinity is the process of supplementation by which the concept we
generate in order to locate an object becomes itself an object in need of location. This problem is not really resolved, as some have suggested, by simply declaring the place of the place of \( X \) to be simply the place of \( X \), or by limiting the assignment of “place” to material objects.\(^{45}\) The problem here, as in all the other cases, occurs at the moment of conceptualization, in the movement of thought that seeks to articulate ontological conditions, to express the possibilities of being.

The problem of the moving arrow occurs when we think of the space the arrow occupies as a whole as discrete. It is distinct from the space surrounding the arrow. Of course, a moment’s reflection will show that the reason for this can only be that we conceive of any space that contains an object as sharing the discrete boundaries of that object. There can be no question of locating the boundaries of such a space in the space itself. When the object leaves that space, as we must imagine it will to imagine it in motion, the boundaries of that space which the arrow just, but no longer, occupied do not remain available to either perception or conception. The boundaries of that space (and here we are fully committed to our fiction in our use of the locative “that” to refer to space) can only be the boundaries of the object. The question of 1), how an object may occupy more than its own space, is shown by reflection to be the question of how any object can transgress its own boundaries, which is precisely the question of 29B1 and B3, and the paradox carries.

We need to think of space as dense in order to understand motion. We find it impossible to conceive of objects without boundaries, and because we think of space and those objects as dense, we must conceive of space as both dense and discrete, and we are trapped in paradox. If we attempt to circumnavigate our problem by supposing objects not to be dense, somehow—to be composed, perhaps, of some number of physical minima—we merely postpone and multiply our problem. Those minima suffer the same ambiguity, with respect to the space each “occupies.” Such a conception merely produces an indefinite number of “arrows,” now called “atoms,” or something of the sort. Once again, the paradox is generated, this time much the same as in “Achilles.” We have, by our mental operations, discovered a plethora of objects where we had once supposed there to be one arrow, just as Achilles discovers innumerable distances where he had once supposed there to be but a small and discrete gap between him and the tortoise.

This trouble is brought about because we can conceive and utter statements about experience that make sense even if they don’t signify.\(^{46}\) As Parmenides’ arguments show, to say “it is not” makes sense, but such
an utterance cannot refer to anything. It is clear that it makes sense, since Parmenides himself uses that language in order to show the error contained in that use. Our naming, in making sense, makes it appear as if what we name is, and is as we name it to be. The problem is that the distinctions implied and created by the use of names need not, and often cannot, relate to real distinctions in what is. From the start, it has been a large part of the task of philosophy to investigate what can or can’t be meant in what is said or thought. Often the effort smacks of tautology: “to say “X” is to indicate X.” Sometimes, however, and it is these times that early Greek thought fastened upon tenaciously, the effort produces enigma, even paradox, when we discover that it is at times very tricky indeed to see what saying some X can possibly mean. These instances, the Greeks seem to have believed, produce the quintessential puzzles for philosophy.

All this is not to say that we should or could abandon thinking or saying, or even do it in fundamentally different ways. Nothing in either Parmenides or Zeno suggests or would allow for such a line of thought. The issue, as with a number of thinkers of this time, notably Heraclitus and Xenophanes, is awareness. The question is whether we will act as if we are asleep or awake. Will we be led, two-headed and confused, into error; or will we at least become aware of the many absurdities our own practices create for us?

There is a deep habit of thought, in the West at least: that words are names for things. Parmenides critiques naming while he discusses paths of thinking, emphasizing over and over that to think and to be are the same in some way. We must be careful to listen to these claims with our prejudice about words in front of us. This Zeno can help us do, because Zeno both is and is not concerned with names. He shows that all paths of thinking necessarily produce strange boundaries, they delineate and relate, but always partially, and, often, oddly.

Borges quotes Novalis: “The greatest sorcerer would be the one who bewitched himself to the point of taking his own phantasmagorias for autonomous apparitions. Would not this be true of us?” Human expression in word and concept not only places before us in palpable solidity an indeterminate world of appearances, but admits between each a potentially infinite series of almost inconceivable interstices. These interstices are usually hidden from us by the very mechanism of their manufacture, but they can be revealed if addressed correctly. When revealed, they may shed light on the fabric of the whole. I believe these interstices, each an abyss, are what Zeno’s paradoxes aim at and over the edges of which they invite us to step.
NOTES

1. All translations are mine unless otherwise noted.

2. A short and now dated summary of what may be called the standard interpretation of the paradoxes, as attacks upon plurality, may be found in Guthrie 1965: 83–87. Guthrie sums up a strong version of such a view: “To conclude, Zeno was a single-minded and enthusiastic disciple of Parmenides, who brought his remarkable intellectual powers to bear on one thing only, accurately described by Plato as ‘the defense of the logos of Parmenides.’ All his arguments are aimed at making men accept the unpalatable truth that reality is one, indivisible, and motionless, by the dialectical method of showing up absurdities in the contrary hypothesis. . . . His opponents include all who believe that rabbits run and time passes—all, that is, who follow the dictates of common sense” (100). Of course, many examples of the standard interpretation include both subtle and careful critique of the relationship Plato posits, and thoughtful analysis of the dynamics actually at work in the paradoxes. A number of important essays on Zeno are collected in Allen and Furley 1975 and Mourelatos 1974. For arguments against the standard interpretation, see Solmsen 1974, in Mourelatos 1974, 368–93; and Matson 2001, in Preus 2001: 87–108. For a radical departure from the literature of interpretation, see Rossetti 1988: 145–52.


4. Russell 1972: 170–88. Russell finds that the paradoxes “are not, however, on any view, mere foolish quibbles: they are serious arguments, raising difficulties which it has taken two thousand years to answer, and which even now are fatal to the teachings of most philosophers.”

5. There is not room to review this interesting set of interpretations and engagements here. Salmon 1970 contains a number of important essays that treat the paradoxes mathematically, dating mostly since 1950, when the topic seems to have gained in popularity. Interesting responses to these efforts include Owen 1975b, in Allen and Furley 1975: 143–65; and Papa-Grimaldi 1996: 299–314. Glazebrook 2001: 193–210 has helpfully traced the history of the mathematical engagement with Zeno’s paradoxes and argues effectively that the mathematical attempts to resolve them have failed to satisfy the specific terms of the paradoxes.


8. Since the sparse remains of Zeno’s writing leave much to speculation as regards the precise nature of his arguments, speaking about them either in particular or as a whole is made difficult. My practice is to treat both the testimonia and the most reasonable reconstructions as “text.” In an important sense, recognized by Plato, it is the puzzles themselves that are most important, justifying some degree of latitude in formulating them.


13. Simplicius, 99.7. Due to the lack of complete testimony for any of Zeno’s arguments, it requires quite a great deal of speculative reconstruction to determine what positions would indeed fall to the arguments. Thus, it is difficult to know whether Parmenides suffers in his hands. Most reconstruction has been guided by an acceptance of Plato’s and Aristotle’s characterizations of Zeno’s intent. However, that many early commentators worried about the effect of some of Zeno’s arguments upon Parmenides’ claims is worth noting. See also Kirk, Raven, and Schofield (1983: 269), who argue that since Parmenides took reality to be both unitary and extended, he is vulnerable to each limb of the antinomy partially preserved in 29B1 and 2, as much as those are who assert that there are many things. They conclude: “It is hard to resist the conclusion that [these fragments do] indeed undermine Parmenides’ \textit{Truth}, and that Zeno was perfectly well aware of this. Perhaps he enjoyed the thought that common sense and Parmenidean metaphysics can be embarrassed by precisely the same dialectical manoeuvres.” And again: “From this we should not conclude that Zeno was not a Parmenidean, but perhaps that he was a Parmenidean in method rather than in doctrine. That is, his paradoxes should be interpreted as showing that it is no conclusive objection to a philosophical thesis that it leads or seems to lead to absurd conclusions—or if it is, common sense is as vulnerable as Eleatic logic” (277).

14. Cf. Simplicius, 138.30, where, quoting Eudemus, he states: “It was natural that Zeno, who, as if for the sake of exercise, argued both sides of a case (so that he is called double-tongued), should utter such statements raising difficulties about the one.” In this passage, Simplicius suggests that Alexander of Aphrodisias, who also held this opinion, was influenced in his ideas about Zeno’s purposes by Eudemus, but that conclusion may follow merely from the similarity of views, and it is not unreasonable to wonder whether Alexander didn’t come to his conclusions independently from reading the arguments himself.

his explicit, if terse, critique of Plato’s frequently problematic, even perverse, interpretations of his predecessors, he offers no argument to support his assessment of Plato’s essential “correctness” in this instance.


17. Following, therefore, Aristotle, who, according to Diogenes Laertius, Lives of Eminent Philosophers, 8:57 and 9.25, called Zeno the father of dialectic, which meant, to Aristotle, the practice of engaging what is said, drawing out the implications, and investigating them for unacceptable consequences, thus refuting the thesis. Cf. McKirahan’s summary (1994: 181). But it is important to note that in his Rhetoric (1355a 29–36), Aristotle says that dialectic does not draw contrary conclusions from identical premises in order to make people believe both (or, necessarily, either), but so that “the real state of the case may not escape us, and that we ourselves may be able to counteract false arguments, if another makes an unfair use of them.” I find Zeno’s paradoxes to be dialectical in this sense: aimed at helping us become aware of the real state of the case with respect to our conceptual and linguistic practices.

18. There continues to be significant disagreement as to what serves as the subject of ἐστί. For the classic statement of this problem, see Owen 1975, in Allen and Furley (1975: 48–81). Many scholars speculate about the missing bits of what has come to be called the cosmology. Diels estimates that we have no more than one-tenth of this section of the poem remaining. I do not wish to enter into that debate, but only note that in the fragments that remain to us, much more is focused upon the process of naming than on traditional cosmological speculations. Cf. Montgomery Furth, “Elements of Eleatic Ontology,” in Mourelatos (1974: 241–70), where, probably thinking of what many commentators now call proto-logical principles at work in parts of the poem, he concludes that the cosmological conclusions about τὸ ἐὸν should be considered as “remote corollaries of principles of a purely logical kind whose work is the real point of the poem” (249). Reinhardt denied Parmenides the status of φυσικός, insisting that he investigated not φυσις, but νόμος, the world of convention we build through names. Mourelatos (1974: 297), in his note supporting Reinhardt, concludes that the goddess’ message is essentially and straightforwardly about how a “delusion” arises for mortals, necessarily, given their practices. In his words, “she tells, as it were, of a primordial event, a kind of original sin of knowledge from which all the other errors of our ideas necessarily followed.” I believe Zeno’s paradoxes are illustrations of just how deeply that error runs. My interpretation does not require the subject of ἐστί to be settled, merely that one recognize that a central issue in the poem is the important and problematic matter of thinking and saying.

19. There is some argument as to whether Parmenides’ characterizations of τὸ ἐὸν should be considered as predications. See, for example, Furth 1974 and, especially, Mason 1988.
20. Clearly, here, and in the following paragraphs, I offer close paraphrases or even quotations of significant sections of B8. I omit the quotation marks both because I believe these sections are quite familiar to most readers and because in such lists, they are exceedingly clumsy.


22. My translation here follows Woodbury’s philological analysis, though not his broader conclusions, and also Long.

23. I have adopted the reading of Furley and of Stokes (1971: 120, 147–48), and am convinced by their arguments. Interpretation in this matter, however, remains contentious.

24. Cf. Long: “The names which men give to phenomena, coming to be, passing away, change of place . . . do have an object—they are really all applied to Being, for there is nothing else to which speech can refer. But men believe them to be true, in themselves—that is, to name separate realities. Thus the name . . . is at once ruled out by its contrary which affirms the opposite” (88). His essay includes a helpful analysis of the term *μορφή*, which he argues is often used to signify one nature to which several names may apply.

25. As Heraclitus repeatedly insists (e.g., 22B32, B89, and B102). In B57, Heraclitus rebukes Hesiod for not recognizing the unity of day and night, and in B67, he asserts that the one Fire is named with many names, as each sees fit. Mason (1988: 154), referencing Burnyeat 1982: 19, n. 22, explains it thus: “The signs established by mortals were *χωρίς ἀπ’ ἀλλήλων* [8.56]—set apart from one another. In attempting to say anything—either positive or negative in form—we have to make use of classifications which *a fortiori* do not relate to the undivided nature of the world; so although we may say what we want to say, and may say it successfully by our standards, our use of language will be ‘wrong and contradictory.’”


27. Although Parmenides, at the end of B8, uses aetherial flame and dark night as paradigmatic illustrations of the “two forms,” he makes it clear, at B8.60, that it is the entire system (*διά κοσμοῦ πάντα*) that he is declaring or explaining (*φατίζω*) as it seems; and also in B9, where he states that *everything* “is called Light and Night.” Reinhardt reads light and dark not as material ingredients, but as concepts. Indeed, if to think and to be are the same, it becomes difficult to distinguish between concept and material ingredient, not only in philosophical analysis, but in experience. If these interpretations are correct, then we need no complete cosmology. We have been given the *entire kosmos* of mortals, which, according to Parmenides, is no more than names, established as binary oppositions.

28. Robert Sokolowski, in an interesting article “The Method of Philosophy: Making Distinctions” (Sokolowski 1998: 515–32), reminds us that “the use of any word just to name a thing brings along with itself a halo of distinctions” (518). He also calls to our attention that “the refutational work of philosophy, the denial of a presumed distinction, amounts to showing
that what we thought was a legitimate distinction is in fact merely a verbal difference—what we thought were two things are only one thing with two names” (520).

29. Plato, *Sophist*, 244d. See comments on this point in Owen’s “Eleatic Questions,” n. 54; and Williams 1981, in Finley 1981. In the *Parmenides*, 142a, Plato has Parmenides conclude that an undifferentiated One cannot be understood to exhibit particular characteristics, nor even have a name.

30. See Parmenides, 28B3, B6.1, and B8.34.

31. See Parmenides, 28B8.35–36.

32. Plato, *Parmenides*, 142b–144e. Russell offers a paraphrase of this argument in Russell 1985: 138, but it treats Plato’s notion of “one” as a number, and tries to solve the problem by refusing numbers, which he regards as mere fictions of logic, existence, and also by calling the meaning of “being” into question.


35. In Plato’s *Meno*, Socrates claims that all learning is a recollection of what we already know; therefore, all thought is the attempt to realize what already lies within it or us.


37. Owens has argued that naming is complicit in the distinguishing of things, not merely the labeling of elements of experience already encountered as distinct.


39. Cf. Grünbaum 1967: 38. Although this text has received a great deal of critique in the literature for its proposed solutions to the paradoxes, it does summarize the problems they pose to physical concepts very well. See, in particular, McKie 1987: 631–39 and S. M. Corbett’s reply (Corbett 1988: 325–31). McKie not only offers a strong critique of Grünbaum’s phenomenological argument concerning the experience of time, but he offers a brief analysis of the conceptual problems in the paradoxes as the ultimate source of their continued difficulty.

40. Schofield, 276, makes this argument, in part. I believe this fascinating puzzle, not fully understood by Aristotle, offers to question the very idea of motion itself by pointing out that our idea of motion depends upon identifying objects in relation, an identification, Einstein will sharply point out, that has no absolute referent authority.

41. James 1948: 154–86 and Whitehead 1929: 53. Whitehead argues that experience exhibits sensible discreteness, and we “weave” infinity into it in our later conceptions. I can find no support for this position in my own experience. See McKie for an argument against “discreteness” in experience.

42. On this point, there is a great deal we might learn from perceptual psychology; for example, Paul Kolers’ famous experiments on perception of motion in his *Aspects of Motion Perception* (Kolers 1972).
43. There are many difficulties with assuming this, but we will put them aside for the sake of argument here.
44. Kirk, Raven, and Schofield 1983: 273. Schofield believes Aristotle is mistaken, and all that is required “for the validity of the inference is that what is true of something at every moment of a period of time is true of it throughout the period.”
45. Cf. McKirahan 1994: 192–93 and Eudemus, Fr. 78 (DK29A24). McKirahan offers to resolve this paradox by suggesting first, that place may be merely an idea, and we do not think of ideas as having a “place.” I would urge caution at too readily accepting this seemingly self-evident premise. Indeed, the question of the “place” of concepts is at least as deeply vexed as the question of the “place” of any material object. Indeed, as Zeno’s puzzle rather directly presents, the issue of “place” as conceptual or material is difficult to resolve. Second, he suggests, in order to avoid the infinite recursion, we need only assert that the “place” of the “place” of X is just the “place of X. This solution solves a bit too much, for if we can collapse the “place” of the “place” of X thus, what prevents us from collapsing the “place” of X to X, thus ending at Zeno’s conclusion, there is no “place”? We do not worry about this concern normally, because of the different ways we conceive of “place” and X. But the paradox, as usual, is already present in those conceptions, because in them, the “place” of the “place” of X is an X.
46. Cf. Mason 1988: 163: “According to my reading [of Parmenides], human discourse may make sense among humans (as it certainly does) but it does not reflect a true picture of how things are. Any attempts to divide up the world with the classifications necessarily embodied in languages will fail to show it as it is.”
47. As Mason 1988: 152 and n. 7, has noted, Jonathan Barnes (1982: 297) believes that Parmenides warns against the “perils inherent in ordinary language” and not in the illusions of sense perception. Lesher (1984: 22) thinks that the “primary antagonist of Fragment 7 is the force of much-tried customary perceptual beliefs and speech (in short, our entrenched habits of thinking and speaking of changes, generations, destructions and pluralities.”

BIBLIOGRAPHY


