
The St. John's Review

Volume XLVI, number two (2002)

Acting Editor

George Russell

Editor

Pamela Kraus

Editorial Board

Eva T. H. Brann

James Carey

Beate Ruhm von Oppen

Joe Sachs

John Van Doren

Robert B. Williamson

Elliott Zuckerman

Subscriptions and Editorial Assistant

Blakely Phillips

The St. John's Review is published by the Office of the Dean, St. John's College, Annapolis: Christopher B. Nelson, President; Harvey Flaumenhaft, Dean. For those not on the distribution list, subscriptions are \$15.00 for three issues, even though the magazine may sometimes appear semiannually rather than three times a year. Unsolicited essays, stories, poems, and reasoned letters are welcome. Address correspondence to the Review, St. John's College, P.O. Box 2800, Annapolis, MD 21404-2800. Back issues are available, at \$5.00 per issue, from the St. John's College Bookstore.

©2002 St. John's College. All rights reserved; reproduction in whole or in part without permission is prohibited.

ISSN 0277-4720

Publishing and Printing

Contents

Essays and Lectures

Measure, Moderation and the
Mean..... 5
Joe Sachs

Plato and the Measure of the Incommensurable
Part II. The Mathematical Meaning of the Indeterminate
Dyad.....
..... 25
A.P. David

Moral Reform in *Measure for
Measure*.....63
Laurence Berns

Book Reviews

Eva Brann's, *The Ways of
Naysaying*.....79
Chaninah Maschler

Eva Brann's *What, Then, is
Time?*.....107
Torrance Kirby

The Feasting of Socrates
Peter Kalkavage's translation of
Timaeus.....117
Eva Brann



Measure, Moderation, and the Mean

Joe Sachs

(with particular reference to the story Odysseus tells in the *Odyssey*)

Anyone who comes to love the writings and artworks that have survived from ancient Greece ought one day to visit Olympia. In Athens there are wonderful things to see, but also evidence everywhere of the destructive effects on buildings and statues of some of the most polluted air anywhere in the world. But, in Olympia, in the Peloponnese, where the most famous of the ancient athletic games were celebrated, one can still breathe purer air, and see glorious sights. In particular, in the museum there, at the two ends of the large main room, restored to their complete shapes, are the two pediments of a temple of Zeus built in the decade of the 460s BC. (Illustrations are at the end of the text.) The form of a pediment will be familiar to you as what sits above the appropriate sort of entrance to a temple. Picture a rectangle, wider than it is long, made of evenly spaced vertical columns; resting on top of this row of columns is a triangle, shorter than it is wide, with a series of sculpted figures across it. The statue at the center of the triangular pediment is the tallest figure and the focus of the whole composition.

The eastern pediment at Olympia depicts Zeus at its center, in a monumental style that makes one think of Egypt. In fantasy, one might see this pediment as a doorway into ancient Greece, leading in from the east. But the truer doorway to things that are most characteristic of classical Greece is at the other end of the room. The western pediment depicts the defeat of the Centaurs, who are men in their heads, arms, and upright chests, but horses in their legs and horizontal lower trunks. They are attempting to carry off human

women, and one young boy, but the sculptor has captured the moment of their defeat. They are being fought by human heroes, including Theseus, but they are defeated by a look and a gesture. At the center of the pediment is Apollo, ten feet tall, looking to his right with his right arm outstretched, the hand level, the palm downward. The look in his eyes is not angry but serious, and his face is not clenched in threat but calm. The centaurs cannot have their way when faced with the power radiated by such dignity. This scene, displaying in outward figures an inner topography of the human soul, holds in it something of the spirit of classical Greece. The fact that you or I can see these seemingly invisible qualities, just by being patient and receptive in front of some shaped blocks of stone, is one of the amazing achievements that has survived from that time and place.

Zeus was, as you know, the father and ruler of the Olympian gods, and even the name of the town Olympia was taken from its temple of Zeus, who was the Olympian, but somehow Apollo came to be pre-eminent among the gods imagined as living on Olympus. At Delphi, on Mount Parnassus, above the Gulf of Corinth, there was an ancient temple of Gaia, Mother Earth, which was considered the center of the earth. But people were kept away from it by the Python, an inhuman monster, until Apollo killed it. The Pythia, the priestess of the temple, then became a medium through whom people could consult Apollo, and learn his word, or oracle. The story of Pythian Apollo embodies the same meaning as that of the Apollo sculpted at Olympia, a victory on behalf of humanity, won over older and subhuman enemies. The dragons and half-humans are not wiped out, but become subject to something shining and beautiful. I think you will find some version of this insight present in almost every work you read from classical Greece, though not everyone would agree, and it may certainly at times be something hard won and dimly seen. But even tragedy, a type of poetry discovered by certain Greeks, always displays that, even in the most horrendous circumstances, there is a human dignity that we can still

recognize; that when it is recognized it commands respect; and that this respect allows all things to be seen in their true proportions.

Above the doorway of the sanctuary of Apollo at Delphi, we are told (Plato, *Protagoras* 343B) that two sayings were inscribed: *Know thyself*, and *Nothing to excess*. These may seem to be disconnected—an exhortation to self-knowledge and a platitude about not going overboard with anything—but to think them together is to find the meaning of each. *Know thyself* means know your true limits, the greed and ambition to which no human being should aspire and the depths to which no human being should sink. And *Nothing to excess* is not just practical advice; it means that the nature of anything, including human life, is revealed only when its true proportions are found—that the truth of anything is its form. The positive version of *Nothing to excess* is another saying—*Measure is best*—and the measure of a thing is its form.

To take a simple example, what are the right proportions for the entrance to a temple? When I described the pediments at Olympia and asked you to picture them and the columns under them, I'll bet you got their proportions just about right. The rectangle formed by the columns is wider than it is high. How much wider? Enough so that it will not look squashed together, but not so much that it would become stringy looking. Let your imagination squeeze and stretch it to see what goes wrong, and then notice that to get it right again you have to bring it back to a certain very definite shape. This is the golden rectangle. It has been produced spontaneously by artists, architects, and carpenters of any and every time and place. What is the ratio of its width to its height? I can tell you exactly what it is, but not in numbers. I can also tell it to you in numbers, but not exactly. It is approximately 61.8 units wide and 38.2 units high. That will get you in the ballpark and your eye will then adjust it to make the ratio exact, but it can be proven that no pair of numbers, to any finite precision, can accurately express this ratio, which is that formed by cutting a line so that the whole has to its larger part the same ratio that the larger part has to the smaller. If you have a calculator, you can check that 61.8 is to 38.2 in just

about the same ratio as that of 100 to 61.8, but no matter how many decimal places you take it to, any ratio of numbers for the parts will fail to match that of the whole to the larger part. We know many things by measuring, and our usual way of measuring is with numbers, but in this case numbers are too crude an instrument by which to know something our eyes know at a glance.

Taking the measure of something, then, does not necessarily require quantifying it. We are always going too far in trying to quantify things. The intelligence quotient is a precise number, and no doubt it means something, but it doesn't capture anything worth calling intelligence. An acquaintance of mine, who grew up in Baltimore, once watched an old, uneducated cook in North Carolina make biscuits. She was writing down the recipe, and at one point asked "How much shortening did you use?" The reply was "Enough to make it short." This example reveals both the genuine intelligence of the cook, which would not show up on any test score, and the fact that she was measuring the shortening not by its volume or weight but by its feel as she mixed it into the dough. Her hands were performing a qualitative measurement, just as the eyes of your imagination were measuring the rectangle by its shape, rather than by the lengths of its sides. You should not be too quick to agree with me about this, because if you do, you may have to give up many other things you believe.

I am claiming, and this is something I learned from certain dead Greeks, that the world really has qualities in it, that they are not subjective distortions projected onto it, but the true forms of things. I know them by my senses, and I know them better that way than by any theoretical explanations of them. With the golden rectangle, the discovery of the ratio of its sides reveals something that we can never name directly—we cannot say how many times bigger one side is than the other, or than any possible fractional part of the other—but we can still recognize that ratio in two ways: in its sameness with another ratio, or, even more simply, in the distinctively shaped rectangle it produces. What is quantitatively incommensurable is qualitatively harmonious. Similarly, the experienced cook

knows that all batches of flour and shortening are not identical, and that they may not behave the same way at different times of the year. If you want the biscuits to turn out right, the only thing to trust is your hands.

We need not go through all five senses, but one example of measurement by the ear will be helpful. Clamp a guitar string at both ends, put a bridge under it about two-fifths of the way from either end, and pluck the two parts. You will hear something interesting. But what if the string is not of uniform thickness all the way along? If you have measured the two lengths to make them exactly as two to three, you might still hear something that sounds wrong, just a little off. The interval of a fifth is produced by strings with lengths in a perfectly commensurable ratio, all other things being equal, but the lack of uniformity in real strings means that one tunes an instrument best with one's ear. It is true that musicians nowadays sometimes use little electronic devices that read out frequencies of vibration. But if the machine malfunctions, it will do no good for the musician to tell the audience he got all the numbers right. Only for the ear is there such a thing as being in tune.

Measure, proportion, and harmony are in the nature of things, and we have a direct responsiveness to them that orients us in the world. These are not the ratios of mathematics, but incarnate ratios. And the words pure and applied do not fit the distinction, because the purer instances of measure are the ones given to our senses. A tradition preserved by a twelfth century writer (Johannes Tzetzes) tells us that the inscription above the doorway of Plato's school, the Academy, read "Let no one without geometry enter under my roof." Does this mean that skill in mathematics was, as we would say, a prerequisite for his classes? I don't think so. It seems to me important that the entrant is not required to have mathematics, but geometry. Much of mathematics develops from the act of counting, a fundamental and natural power without which we could not speak or think, but geometry starts in a different way, from a sensory recognition of the ordering of simple visible shapes. In Plato's *Gorgias* (508a), Socrates actually tells a young man that he is without geom-

etry, but he is not criticizing Callicles for his intelligence or learning or skill, but blaming him for a failure of moral choice. The young man is greedy and in danger of having no friends, Socrates says, because he does not recognize the way geometrical equality gives all things the proportions that let them be part of larger wholes. The loss of a sense for geometry is equated with losing one's way in the human world.

An example that shows both the positive and the negative side of this is the central scene in Plato's *Meno*. Meno's "boy," a slave who has never been taught geometry, begins to discover it in front of us. Relying at first solely on his ability to count, he twice goes wrong in trying to measure the side of the double square, but counting also shows him he is wrong. With Socrates leading the way, by drawing figures and pointing at them, the slave eventually is led to trust his eyes, and to see the square double itself, out of itself. And while Socrates asks all the questions, the slave has to do all the seeing himself, out of himself, just as he was led to his mistakes, but made them himself. This is all very elementary, but the slave has geometry in him, and he also has a little bit of courage and determination in getting it out—two qualities his master lacked when he found some unexpected difficulty in answering other questions. And this finally is the point of the scene, the reason Socrates arranges it in front of us: Meno cannot see that his "boy" is a better man than he is. We can all recognize that certain people deserve more respect than others, if we are honest, but Meno has lost that capacity. He has lost his way. He is without geometry.

This way of understanding geometry may help explain an apparent inconsistency in Aristotle's *Nicomachean Ethics*. Near its beginning, Aristotle says something that might at first seem to be opposite to the inscription on Plato's gates. He warns the reader not to look for the precision of mathematical demonstration in the study of ethics (1194b 19-27). Is this not equivalent to writing on the portals of this sort of philosophy, "let no one try to enter here with geometry"? If so, it is odd that Aristotle fills his exploration of ethics from the beginning with references to actions that are in pro-

portion, or in ratio, or in a right ratio. For instance, someone may have good fortune and a steady course through life, but be knocked out of equilibrium by some misfortune. The inability to cope with disaster is out of proportion (1100a 23, 1101a 17) with the rest of the life. Since some alteration is inevitable, and some grief would be appropriate, and no rules prescribe its amount or how it should be expressed, only a geometrical eye can judge this. The fitness of such actions might be measured with some precision, but it can never be demonstrated. All the circumstances and all the history of any action can never be known, too many considerations have to be balanced, and equally good alternative ways of handling difficulties are always possible.

Aristotle, then, does believe that human actions can be chosen and recognized as right or wrong with precision, but he denies that this is the same as the precision of a mathematical demonstration. But he not only uses the language of ratio and proportion for the kind of precision appropriate to ethics, he also speaks of all actions that come from virtues of character as actions that hit the mean. This is easy to misunderstand, because readers tend to ignore the warning he gives almost as soon as he begins talking about the mean, that this sort of mean is also an extreme (1107a 6-8, 22-3). In fact, people rarely understand that this sort of mean is not quantitative at all. But taking it in a quantitative sense opens the way to identifying the mean with the mediocre, the middle of the road, or even middle-class morality, the sort of timidity that shies away from anything that might distinguish one from the crowd. But one of the things that Aristotle says hits the mean is courage, and he says plainly that there is no such thing as too much courage.

Now one way to see how courage both is and is not a mean condition is to extend the mathematical language to a second dimension, and this is both accurate and helpful. There is no such thing as too much courage, but there is such a thing as too much confidence, just as there can be too little of it. Courage occupies a mean position on a scale of fearfulness and fearlessness. The sense in which courage is an extreme is on a different axis, one on which

the person who has just the right amount of fear puts that attitude into action in the most excellent way. We might even liken this two-dimensional scheme to the appearance of the west pediment at Olympia, on which Apollo occupies the middle position, but also towers over everyone else. Courage is like that. As I say, this is true and it helps one keep hold of Aristotle's claim that the virtues are extremes of human character, but also stand in and aim at a mean.

But for all that, this talk of measuring along two axes seems to me to be misleading in the most important respect. I can show how very simply. Just ask yourself if the power of Apollo over Centaurs and humans would be greater if he were taller. As it is, he towers over them, but the design could have been made in such a way that he dwarfed them, reduced them to puny insignificance. With a little bit of play in the imagination, I think you can see that this would destroy the sculpture's effect. The designer of the pediment (who may have been someone named Alkamenes) wasn't aiming at making Apollo as big as possible, but at making him extend the human stature just a little. The Centaurs are sub-human monsters; a gigantic Apollo would also be monstrous. The sculptor has not only placed Apollo in the middle of the horizontal array; he has also hit a mean along the vertical axis. All the power of the ensemble depends on getting the figures in a right relation to one another. As with the golden rectangle (and recall that the pediment originally sat on top of one), it is not a matter simply of adjusting Apollo's height, but of forming a single design.

Apollo's height is a precise mean between a ridiculous shortness and a monstrous tallness, but that mean is also an extreme in the sense that it is unsurpassably right. But the way in which it is unsurpassably right is not quantitative. It is unsurpassably right *in the design* to which it belongs. It fits, and nothing else would. Liddell and Scott, the authors of the standard dictionary of ancient Greek, will tell you that *aretê*, the word for virtue, comes from the name of Ares, the god of war, but another school of thought derives it from a humble verb that means to fit together (*arariskein*), or be fitting—it may be related to a similar humble verb, from wood-

working (*harmozein*), from which we get our word harmony. Courage too, as Aristotle or any thoughtful person would explain it, comes not from the bloodthirstiness of the war god, but from recognizing what one's circumstances call for and carrying it into action. Only when the circumstances are extreme, as they are for Patroclus or Hector, does courage call for the extreme risk, or sacrifice, of life, or perhaps, in the case of Achilles, for the sacrifice of revenge. At the end of the *Iliad*, the usual ways of confronting an enemy are no longer fitting, and Achilles recognizes that.

The recognition that Hector's body belongs to his father and to his city has nothing to do with anything quantitative. It is not arrived at by adjusting any sort of dial up from too little or down from too much. But it is a measured response to the situation that Achilles faces. It is geometrical equality that Achilles restores, by letting the dead man be given an appropriate funeral. It is dignity that he measures. Priam, the miserable wreck of an old man at Achilles's feet, dominates his action in exactly the way Apollo dominates the Centaurs. In both cases, anger takes up a subordinate position in the design of the human soul. It finds its right proportion to the whole. On a list of the various meanings of the word *logos* preserved from Aristotle's school by an ancient scholar (Theon of Smyrna), one of those meanings was the ratio of one who gives respect to the one who is respected. By looking at Apollo in his glory, or at Priam in his misery, we can begin to take our own measure.

This kind of qualitative measurement is appropriately represented by ratios, because a ratio is not a quantity. A ratio limits a quantity. It is a revealing fact that we all have trouble remembering what Euclid means by greater ratio—that it is not the span of the interval between two magnitudes but the size of the first in relation to the second that he is referring to. A length, or an area, or a volume, or for that matter a weight is measured by its size or amount, but a ratio is something on a different order of things. We measure length by cutting it up and counting the pieces, but ratios do not admit that kind of treatment. Fractions do. Fractions are quantities but ratios are not. The nature of quantity is that of material. There

can always be more of it or less, arranged this way or that. And this way of looking at quantity helps one see that ratios belong to the realm not of material but of form.

In the *Odyssey*, Odysseus tells a story that goes on for four long books. About two-thirds of the way through it he tries to stop and go to bed, but his hosts will not let him. He claims the story is taking too long to tell, and there is too much more of it, but they are spellbound and persuade him to go on. The king who speaks for them tells Odysseus that there is a *morphê* upon his words (XI, 367), meaning a shapeliness or gracefulness. This is one of the words that comes later to be used for "form" in an important philosophical sense. Odysseus need not measure his words by time or number, the king is telling him, because his hearers measure them by beauty and depth. A form does not merely surround its content with a shape. It transforms the material and makes it be what it is, through and through. And just as Alkinous praises Odysseus for the form of his story, Aristotle too, in his *Poetics* (Chap. 8, 1451a), praises Homer for knowing where to start and end an epic poem to make it be one story governed by one action.

What is the form that governs the story Odysseus tells the Phaiakians? Neither they nor we ever take that story to be a simple report of the events that Odysseus witnessed and took part in since the time he left Troy. It is a story formed or transformed by art. But if all stories that reshape events were lies, fiction would simply mean falsehood. Alkinous distinguishes Odysseus from the multitude of liars the dark earth breeds. His criterion is not easy to translate, but it is understandable to us because we too have heard Odysseus tell his story, and know exactly what he means. Lattimore makes Alkinous say that the liars make up stories from which no one could learn anything (XI, 366). The more usual translation has it that the lying stories are made up out of things no one could see, and this, in turn, either in the sense that all the human witnesses are dead, or in a deeper sense. Both translations are possible, and both capture something of what Alkinous is talking about. Odysseus is trying to get something out of the Phaiakians, but he is also letting them learn

from his experience, and they count that a fair exchange. Things that are literally false, contrary to fact, are redeemed from falsehood if they capture truth that goes beyond the merely factual. No one can go see if the story was accurate, but no sensible person would try to check it in that way, because its proper subject is something that cannot be seen. The story puts in front of the eyes of our imaginations things that are invisible.

What is Odysseus's story about? It is, first of all, full of fabulous beings, gods and monsters and people who live in strange ways. A question that is repeatedly asked, not with formulaic phrasing but with constant changes in its wording, is whether the characters that are about to be encountered are human, that is, dwelling on the earth and eaters of bread (VI, 8; IX, 89, 191). And even among those who are not immortal gods and monsters, some dwell under the earth and drink blood, some dwell in mountain caves and are cannibals, and some eat the lotus fruit and dwell in their own psyches. But these non-humans are not only a background against which the human form is displayed, they are constant temptations to the humans themselves.

Some of the companions of Odysseus are seduced by the lotus into the oblivion of ignorance, but Odysseus himself is later seduced by the Sirens, toward the oblivion produced by the love of knowledge. On either side there is a loss of connectedness to the human community. And Odysseus's story begins among the Kikones, where his men get drunk and reckless with success, and then, when their luck turns, lose six of their companions out of each of their twelve ships; his story ends among the cattle of Helios, where the men who are left, less than fifty of them on their one remaining ship, get hungry and reckless in misfortune, and lose their lives. In both overconfidence and despair their hungers become unmeasured by judgement. And again Odysseus too experiences the same dangers, in his different way. His hunger for recognition, when he has saved himself and his men from the Cyclops, results in a foolhardy judgement which brings him Poseidon's curse, and turns victory into needless defeat; and this is followed by another foolhardy judgement, that he

could stay awake for ten straight days with the bag of winds, and arrive home the single-handed savior of his men. His hunger for glory is as deadly to his judgement as his companions' hungers are to theirs.

This break-down of judgement is again a loss of the connectedness of human community, since disproportionate hunger of any kind, whether from extreme self-indulgence or extreme need, brings isolation. After the fiasco with the bag of winds, Odysseus twice shows himself to us in isolation on top of mountains (X, 97 and 148), and this image surrounds his explicit comparison of a monstrous Laistrygonian to a mountain peak (X, 113), and echoes his earlier description of the Cyclops (IX, 187-92). Here is what Odysseus says when he narrates his first sight of the cave of Polyphemus: "Here a monster of a man bedded down, who now was herding his flocks alone and afar, for he did not mingle with others, but stayed away by himself, knowing no law, for he was formed as a wondrous monster, not like a man, an eater of bread, but like a wooded peak of the high mountains which stands out to view alone, apart from others." In his outsmarting of the Cyclops, Odysseus displays the power that lets a puny human master a gigantic brute, but in his glorying Odysseus outsmarts himself, and ends up no better than a Cyclops.

Finally, Odysseus is measured against the gods. This is most apparent in his verbal jousting with Athena when he awakens on Ithaca in Book XIII. She uses superhuman knowledge and magic to deceive and test and tease him, while he holds his own with his merely human skills, to her delight. "That's my boy," she says in effect, and he replies, in effect, "So where have you been for so long." But this alliance of man and goddess as friendly rivals is not the one that is his true test. It is Kalypso who offers him the ultimate choice, to be her lover forever, while neither of them grows old, on an island that grows everything to delight the senses and requires no work. He chooses to go back into the sea, to work, to fight, to take chances, and ultimately to die. He does not talk about any of this in the story he tells the Phaiakians, though he had told

the king and queen the bare outline of it the day before. We know the story of Kalypso's island from Homer's telling of it, before we know how to understand it. It is Odysseus who puts it in context. From the time, early in Book X, when he comes down from the mountain on Circe's island, the rest of Odysseus's story is about his losing battle to win back the trust of his companions. "I am in no way like the gods," he has said to Alkinous, "but count me equal to whomever you know among humans who bears the heaviest load of woe." (VII, 208-212) But unlike another man who might say that, Odysseus had a choice, and chose human troubles. What he lost, with his companions, was more worthy of choice to him, than what he could gain from Kalypso's gift.

We make much of Achilles's choice, to live a short and glorious life instead of a long and ordinary one, and pay less attention to Odysseus's choice, to live not at ease forever but for a long but bounded time, amid troubles that will eventually come to an end. You probably know that the first word of the *Iliad* is wrath; of the *Odyssey* the first word is man. The shaping of the *Iliad* rises from the flare-up of Achilles's wrath, to come to completion when that wrath itself finds its limit, not just in duration but in submission to a higher good; the wrathful, warlike side of human life finds its form and proportion within a larger whole. The *Odyssey* is formed in a different way. It starts in three places (Olympus, Ogygia, and Ithaca). It backs up, and proceeds for a while on parallel tracks, as we hear a story told and watch the interaction of the teller and hearers, and finally begins moving forward in its second half. But through and through, the form that shapes the *Odyssey* is the form of the human being, as it shows us a man travelling up to all the limits of what it is to be human, coming to know them, and choosing to remain within them. A participle in the fifth line of the poem (*arnumenos*), as it is usually translated, credits Odysseus for saving his life, but it has a richer meaning: he earned or achieved his life, proved worthy of it by learning that it was worthy of his choice. The Phaiakians understand his story, and honor his choice by making one in its image: they choose to risk their easy life by taking on

his troubles as their own, and their journey to Ithaca is their last carefree voyage. The first thing we hear about the Phaiakians is that they live far away from men who earn their bread (VI, 8), but the human form becomes visible to them in Odysseus, and draws them out of their isolation.

In the west pediment at Olympia, human dignity is made visible in the figure of Apollo. In the toils and troubles of Odysseus at sea, human worth becomes apparent against a background of goddesses and monsters and bad choices. The beauty of the Phaiakians' action is set against the perversion of the human image in the young suitors who have taken over Ithaca. The suitors are worse than the Centaurs at Olympia, who are simply appetites that have not yet come under control. The suitors have no respect for any man or woman (XXII. 414-15), and so they cannot be reformed. What they cannot recognize, they cannot take as formative. Their image, in their feasting, reflects that of the human pigs on Circe's island; in their oblivion to someone else's home, it reflects that of the lotus eaters; and in their reasoning that Telemachus is about to become an obstacle to their pleasure and so, of course, should be killed, they are no different from the cannibal Cyclops. Odysseus knows what to do when immortality is offered to him, because he has learned to respect the claims of human need, and wants to redeem his loss of his companions, for which he bears not all, but enough, of the blame. And he will have to use the same standard to decide what to do about the suitors.

But in Ithaca and abroad, in the story that surrounds that of Odysseus, there is a gallery of portraits of simple human dignity. They work on us to convey the power we respect in old people whose experience has brought them understanding. One of them is Nestor, who responds to strangers first by feeding them and only afterward asking whether they are pirates. (III. 69-74) Pre-eminent among these figures is Eumaeus, the swineherd, a victim of pirates; born the son of a king (XV. 412), he was kidnapped and sold into slavery, but came to accept his lot as the lowliest of servants with no bitterness (XIV. 140-147). He balances the picture of life on Ithaca:

as the suitors have turned a palace into a pig-sty, Eumaeus, with his courtesy and shrewd judgement, has turned a pig-sty into a place of gracious hospitality. Homer refers to him as the godlike swineherd (XIV. 401, 413), and as the swineherd, first in the ranks of men (XVII. 184). But surrounding and woven through all these portraits of age and wisdom is the un-regarded figure of Mentor. Odysseus had left him in charge in Ithaca (II. 225-7), but his power to rule rested on nothing but respect. With the invasion of the suitors, the foundation of civilized life on Ithaca collapsed, and in the resulting chaos we hardly notice Mentor, since he cannot fight, and barely raises his voice. He is glorified in the last line of the poem, when Athena, in a poetic equivalent of the sculpted figure of Apollo at Olympia, has put an end to the violent strife of people who are all alike (XXIV. 543), making herself recognizable in the voice and living form of Mentor. These last words of the whole poem confirm our sense that its first word, man, is what it intends to reveal to us, and the final embodiment of that revelation is in a radiant presentation of a character so humble the poet had to compel us to notice him at all, a character whose dignity lives only in the medium of our respect, while that dignity, in turn, is the only foundation for shared human life. Homer makes us err, in overlooking Mentor, and come to ourselves in recognizing him, so that, in a small way, we mimic Odysseus's journey.

But if we are to take the human measure from Mentor, that must mean that he displays human excellence, and that would be a very strange claim to make. The poet Homer can play in a serious way by putting the kingly soul of Eumaeus in a position in which he has only pigs to rule over, and he can leave us with the vision of a goddess who makes a humble man resplendent, but neither of these figures seems to display any maximum of human possibility. Instead, what we seem to see in them is the last shred of dignity that cannot be taken away from any human being by any sort of mistreatment from others, but can only be lost by one's own act. When

Odysseus comes out of the sea alone on the island of the Phaiakians, he burrows under a pile of leaves. Here is the way Homer describes this action: "As when someone hides away a glowing ember in a black ash heap at the end of the earth, with no countrymen anywhere near, no others at all, saving the seed of fire in a place where there is no other source from which he could start a fire, so did Odysseus cover himself up with leaves." (V, 488-91) Odysseus almost lost himself on his journey. And the thing that nearly smothered the last spark of humanity in him was his drive to excel.

We are told in the third line of the poem that many were the people whose cities he saw and whose intellects he knew, and for Odysseus every new experience was a test. Seeing and knowing were never for their own sake for him. He was always taking the measure of any new places and their inhabitants, and that, for him, came to be for its own sake, continually to prove himself more than the equal of any kind of skill or strength or strategem, and worthy of respect from anything that exists that can pay respect. He wanted to go beyond anywhere others had been, to find every limit and surpass it. This fits a conventional understanding of excellence, but it makes no sense. It aims at nothing but beyond everything, so that the task is infinite and formless. To achieve excellence in this way is to measure oneself against what is measureless. Only a being of infinite capacity could be genuinely successful. One image of human finitude in the *Odyssey* is our need to sleep. The journey from Aeolia to Ithaca is long and hard, but achievable, but also just barely longer than anyone could stay awake for. With a dangerous cargo like the bag of winds, a sensible captain will have to admit his own limits to himself, and take someone else into his confidence, but Odysseus does not permit himself such weakness. That stubbornness costs him more than nine years of trouble, and eventually costs every one of his companions his life. When we see Odysseus give way to sleep again, the meaning is exactly the opposite of the former occasion. His sleep brings to an end his efforts to persuade his

comrades, and they eat forbidden meat and die; they decide that they are no heroes, and cannot hold out indefinitely against hunger.

Afterward, Odysseus never ceases to defend them. But it is usually not his companions themselves that he refers to, but the common lot of human beings that he discovered by paying attention to them. No less than six times he lectures people about the cursed belly, and the things its need can drive people to (VII. 215-21; XV. 343-5; XVII. 286-9, 473-4; XVIII. 53-4; XIX. 71-4). The man who once despised weakness in himself is now the fierce defender of those whose strength fails them. His rejection of the offer of immortality is in part a gesture of solidarity with his companions, and his disguise as a beggar on Ithaca in some way displays the truth. In front of the Phaiakians, Odysseus could have told his story to present himself as the hero of Troy, the most important man in the world, but he chooses instead to make his loss and his need central. He tells one of the suitors "Nothing feebler than a human being does the earth sustain, of all the things that breathe and crawl on the earth" (XVIII, 130-1), using the same adjective he chose when telling Kalypso "I know very well that thoughtful Penelope is feebler than you in both form and stature" (V, 215-17). He has learned to see what is fragile in us and in need of protection as having a higher claim on his effort than any extraordinary achievements that might extend human glory.

But the radiant dignity conferred on Mentor at the poem's end, and glowing from within Eumaeus in its midst, is not the whole of the human image either. There is also heroic action that is not ambitious for glory but called forth in defence of what is dignified but weak. In Aristotle's ethics the word that names human dignity is *spoudê*, seriousness, the quality that is apparent in certain exceptional people who know what to take seriously. But in the *Odyssey* the focus is on *aidôs*, respect, the quality present in all of us that enables us to recognize dignity. Respect can take the place of force, and can bind together a community, establishing the conditions of life under which the things that have seriousness and dignity can be given their due. The actions that embody respect constitute what

Aristotle calls distributive justice, the paying of what is due not merely in the quantitative medium of money but by reference always to the qualitative medium of honor. In a just community, according to Aristotle, there will never be simple equality, but rather proportional equality, actions and titles and gestures that make evident what different people deserve. And this is what Socrates called geometrical equality, since it requires an act of seeing rather than one of calculating.

In the *Odyssey*, our seeing is put to work most vividly beyond the world in which we live and make choices, envisioning the Cyclops, the passage between Scylla and Charybdis, or Odysseus lashed to the mast while the Sirens sing, but as in the west pediment at Olympia, these figures depicted as outwardly visible display the shape of the invisible human soul. The soul that Homer lets us recognize as unsurpassably right in its ordering is the one that we see in the hero in rags, in his feeble old father in armor (XXIV. 513-25), in the boy who calls an assembly of adults, in the woman who neutralizes the strength of 108 men (XVI. 245-51) and stops time itself for four years by unweaving every night what she wove by day (II. 94-110). It is the human balance in which strength has reason to give way to weakness, and weakness has resources to find strength. It is the human mean that can live only within a community. The best human life is a topic that demands philosophic reflection, but such reflection would not be possible if one could not, in the first place, simply see its form.

NOTE:

The central importance in the *Odyssey* of the respectful attitude *aidōs* that makes human communities possible is something I first learned by reading Mary Hannah Jones's senior essay, "A First Reading of the *Odyssey*," included in the collection of St. John's College Prize Papers, 1977-78.





Plato and the Measure of the
Incommensurable
Part II. Plato's New Measure:
The Mathematical Meaning of
the Indeterminate Dyad
Amirthanayagam David

I shall argue that the controversial developments—some would say the reversals—in Plato's later metaphysical outlook were in fact an inspired response to some truly epochal developments in the mathematics of his day; in particular, to certain seminal advances in the theory of the irrational. Following on my reading of the geometry lesson at *Theaetetus* 147, and of its significance for that dialogue and for the *Sophist* and the *Politicus*, I can now shed light on one of the most obscure notions associated with Plato, a thing known to Aristotle as the “indeterminate dyad.” The discovery and description of this remarkable object—remarkable, all right, yet thoroughly non-mystical and mathematically legitimate—can be seen as the motive force behind some of the arguments and constructs in the late dialogue *Philebus*. In interpreting the ancient testimony, my reconstruction demonstrates that the mathematical meaning of the late Platonic metaphysics was either not transmitted to, or simply lost on, the successors of Plato and their critic Aristotle. But where the philosophers strayed, the mathematicians found a fruitful path: the conclusion to the work started by *Theaetetus* and Plato finds a home of concision and elegance in the mathematics of Euclid's Book X. A historian of ancient philosophy may have to distinguish in future between the academics who inherited Plato's arguments, and the mathematicians who understood them.

Perhaps the best evidence for a revision, radical or not, in Plato's thought comes from Aristotle's intellectual biography in *Metaphysics* A. He there refers to a *καί Πστερον*, an "even afterwards" in Plato's career (987b1). The passage is explicit that there was a before and an after in Plato's thinking which was not apparently defined by the death of Socrates. What is more, the change was apparently of some considerable moment; the whole force of the expression is in the *καί*; Plato is said to have accepted the premise of universal flux espoused by Cratylus and the Heracliteans, *even* afterwards. The theory of sensation we have discussed in the *Theaetetus* is an example of his new approach to an old premise, an approach based on a new mathematics of measurement.

At one time during the geometry lesson in the *Meno*, Socrates counsels the slave boy, who is trying to find the line from which a square the double of a given square is generated, "if you do not care to count it out, just point out what line it comes from (εἰ μὴ βούλει ἀριθμεῖν, ἀλλὰ δεῖξον ἀπὸ ποίας, 84a)." This is the vintage Socratic irony, a playful but possibly sinister half-telling: there is in fact no straightforward way to count out such a line with the same unit measures that count off the side of the given square. In a passage that means to inspire confidence in our ability to learn, Socrates hints at a shadowy impediment that lurks, even as the slave boy triumphs. This problem of incommensurability was the bane of measurement science—*μετροητική*, that science which assigns number to continuous magnitude—perhaps onwards from the time of Pythagoras. Measurement *πρὸς ἄλληλα*, or mutual measurement, the reciprocal subtraction (*ἀνθυφαίρεσις*) of two magnitudes, came to an end or limit (*πέρας*) at the common measure of these magnitudes; but if the magnitudes were incommensurable, the process of subtracting the less from the greater, and then the remainder from the less, would continue indefinitely (i.e., it was unlimited, *ἄπειρον*). Such everyday magnitudes as the diagonals of squares with countable sides were *ἄρρητον*, inexpressible, or

ἄλογον, irrational, in terms of those sides, an embarrassment to any serious measurement science.

The in-betweenness of irrational lengths with respect to rational (countable) ones—in the *Meno*, Socrates takes pains to show by a narrowing process that the required length, the side of an eight-foot square, lies somewhere in between two and three feet (83c-e)—may have been the clue to a new approach. Plato's Stranger proposes a new branch of measurement science in the *Politicus* (283d ff.); alongside measurement *πρὸς ἄλληλα*, there is now to be measurement *πρὸς τὴν τοῦ μετρίου γένεσιν*, measurement toward the generation of the mean. I have suggested that *Theaetetus*' seemingly humble classification of roots (*Theaetetus* 147c ff.) was the ultimate inspiration for this formulation; his novel use of the mean proportional allows number and magnitude (the phenomena of arithmetic and geometry) to be subsumed successfully under a revitalised and heuristic measurement science.

"Squaring' is the finding of the mean (ὁ τετραγωνισμὸς μέσης εἰρησις, *De Anima* 413a20)," and he who defines it this way, says Aristotle, is showing the cause of the fact in his definition. To square a given rectangle, one has to find the mean proportional between the lengths of its sides. *Theaetetus* distinguishes between two kinds of length as sides of squares: a *μῆκος* is the length of a side of a square number (4, 9, 16, etc.), the mean proportional (or geometric mean) between the unit and a square number; a *δύναμις* is the side of a square equal to a rectangular number (2, 3, 5, 6, etc.)—i.e., the geometric mean between the unit and a rectangular number—which is incommensurable with the unit in length (*μήκει*) but commensurable with it in square (*δυνάμει*).

Taken by itself, this classification is hardly more than a new way of naming the phenomena of measurement science. Even at this stage, however, the roots of non-square numbers, formerly irrational and intractable, have become more expressible (*ῥητά*); they are at least commensurable in square. A third category can now be envisioned—incommensurability in length and in square—so that where we had a polar division of opposites (rational-irra-

tional), now we have an enumeration of the phenomena: rational, expressible, irrational.

But the true mathematical utility of this re-classification lies in the lucid quality of the geometric mean. We recall that for any interval, this mean can be approximated in length by interpolating successive pairs of arithmetic and harmonic means within the given extremes. Since in a rational interval, like that between the unit and a non-square number, the interpolated means are also rational, and since they define an evanescent sequence of rational intervals around the same geometric mean, the incommensurable roots of non-square numbers can now be systematically approximated with numbers of their own. Each of these lengths, which we nowadays call $\sqrt{2}$, $\sqrt{3}$, $\sqrt{5}$, etc., is approximated as a geometric mean by one or more series, each unique and infinite, of arithmetic and harmonic means, which give better and better rational over- and under-estimates (respectively) of each incommensurable length. Though the geometric mean is never reached, each successive pair of interpolations reduces the interval containing it by more than half, so that each of the approximating extremes approaches closer than any given difference to the mean (by Euclid's X.1). Hence the process is unlimited in its degree of accuracy.

The uniqueness of each of these “dyadic series,” corresponding to each of the incommensurable roots, is the key to their achievement. Numbers may now be introduced, in a mathematically useful and rigorous way, to describe the lengths of these roots. Measurement science can thereby fulfil its mission, once paralysed in these cases, to *number* the greater and the less. Irrational roots are no longer vaguely “in between”: each dyad of interpolated means defines *all* rational lengths, whole or fractional, than which a particular incommensurable root is greater, and all than which it is less. Since the “dyadic interval” can be made to shrink indefinitely, these incommensurable lengths have been uniquely measured in terms of a given unit, as uniquely as any commensurable length.

A rational length is measured by one number, a “one many,” a single collection of so- and so-many units (and fractional parts).

These lengths are therefore measured both absolutely and relatively in terms of the unit length; one can answer the question, “How many is it?” with respect to them. An irrational but expressible length, on the other hand, is measured by a series of pairs of numbers, a unique but “unlimited” or “indeterminate” dyad (ἀόριστος δύαξ). Such lengths are only relatively measured in terms of the unit; for them, one cannot answer the question “How many is it?” with a definite number, but one can *always* answer the question, “Is it greater or less than this many?” There are now two ways in which number can be applied to continuous magnitude—with a normal ἀριθμός measured by the unit, or an indeterminate dyad of such ἀριθμοί—so that both the diagonal and the side of a square can be “counted off” in terms of the *same unit length*.

The original significance of the unit and the indeterminate dyad can now be recognised in the context of the new branch of measurement science: the former, already a principle and product of the existing branch, measurement πρὸς ἄλληλα—for the unit is the measure of all commensurable magnitudes, and the ultimate result of the reciprocal subtraction of commensurable quantities—is a measure of all *rational* means (including the roots of square numbers). The latter is a way of measuring all the *expressible* geometric means (the roots of rectangular numbers); it is a principle and product unique to the new branch, measurement toward the generation of the mean, for paired interpolation represents a way to “generate” an expressible geometric mean numerically, and the resulting indeterminate dyad of greater and lesser values is a precise and exhaustive way to locate an expressible length within the scale of the rational continuum. The unit and the indeterminate dyad, the respective measures of rational and expressible means, are therefore rightly conceived as the two proper principles of that science which approaches measurement through the construction of means.

* * * * *

In the *Philebus* (23c ff.), Socrates proposes a four-part division of all beings. The first two segments cover the limited and the unlimited, the once all-embracing Pythagorean pair of opposites. The third division encompasses those beings produced by the mixture of the polar principles; this mixed category represents the distinctive late Platonic innovation in ontological thinking, outlined also in the *Sophist* (see 252e). A fourth division is enumerated to cover the cause of the mixing in the category of mixed beings.

At first glance, the mathematical subtext of this classification seems fairly straightforward. The unlimited stands for continuous magnitude, that which admits of being greater or less (24e); the limited stands for number and measure (25a-b). The mixed class stands, as could be expected, for continuous phenomena that admit of measurement or a scale: Socrates mentions music, weather, the seasons, and “all beautiful things (ὄσα καλὰ πάντα, 26a-b).” The demiurge of the *Timaeus*, who constructs a cosmic musical scale out of elements he has mixed (35b ff.), could be seen as a mythical archetype of the fourth kind of being, the cause of mixing. The mixer is also a measurer.

Certain peculiarities in Plato's presentation suggest, however, that it is motivated by the developments in ancient measurement theory that I have described. First of all, the distinction made between the limited and the unlimited is virtually analytic. This would not be necessary for a distinction between number and magnitude, because of the phenomenon of commensurability. But the class of the more and the less, the pair which characterises the unlimited, is said to disallow the existence of definite quantity; if it were to allow quantity (ποσόν) and the mean (τὸ μέτρον) to be generated in the seat of its domain (ἔδρα ἐγγενέσθαι), the more-and-less themselves (a dual subject in Plato's Greek) would be made to wander from the place where they properly exist (24c-d). The class of the unlimited therefore stands for the greater-and-less *qua* greater and less, those magnitudes which refuse numerical measurement of any kind, like the radically incommensurable lengths

(commensurable neither in length nor in square). The class of the limited, on the other hand, is said to cover only those things which admit of everything opposite to the more-and-less (τούτων δὲ τὰ ἐναντία πάντα δεχόμενα):

πρῶτον μὲν τὸ ἴσον καὶ ἰσότητα, μετὰ δὲ τὸ ἴσον τὸ διπλάσιον καὶ πᾶν ὅτιπερ ἂν πρὸς ἀριθμὸν ἀριθμὸς ἢ μέτρον ἢ πρὸς μέτρον... (25a-b)

first the equal and equality, and after the equal the double and everything whatever which is a number in relation to a number or a measure to a measure.

The limited is therefore the class of commensurable magnitude. Is the distinction between limited and unlimited then a descriptive one based on that between number and magnitude, or really an analytic one between two kinds of magnitude, the commensurable and the incommensurable?

The mixed class is also described as the class (ἰδέα) of the equal and the double (25d); this means it must be meant to include within it the whole class of the limited or commensurable. One could have expected this if it corresponds to a class of scalable magnitudes. But Socrates goes on to add this curious category to its domain:

...καὶ ὁπόση παύει πρὸς ἄλληλα τὰναντία διαφόρως ἔχοντα, σύμμετρα δὲ καὶ σύμφωνα ἐνθεῖσα ἀριθμὸν ἀπεργάζεται (25d-e)

also so much of a class as stops things which are opposites, differently disposed to one another, and fashions them into things commensurable and harmonious by putting in number.

This function appears to be unique to the mixed kind of being. Since only incommensurable things can be made commensurable, the unlimited did indeed signify the incommensurable, as was surmised; and the class mixed from the limited and the unlimited appears to include a new species not found in either apart, which makes incommensurable magnitudes commensurable by “putting in” or “inserting” (ἐντίθημι) number. With somewhat uncharacteristic acuity, Protarchus understands Socrates to mean that certain constructions (or “generations,” γενέσεις) follow from the mixing of the Pythagorean opposites (25e). (This interchange seems to be a single Platonic exposition split between two speakers. The author better remembers his dramatic premises when, within less than a Stephanus page, he has Protarchus suddenly express his unsureness about what Socrates could have meant by the members of the third class.)

The two ways of measuring magnitude in terms of a single unit length, by means of a number or an indeterminate dyad of numbers, correspond to the two classes which make up Socrates' third category. In particular, the second way of measuring corresponds to that construction described above which is unique to the mixed category. Both take up magnitudes that were formerly irreconcilable, subsumed by an opposition of greater to less—*i.e.*, incommensurables belonging to the category of the unlimited—and make them concordant and commensurable by “inserting number.” But neither of them does this in such a way as thereby to reduce these magnitudes to the class of the limited. Rather, certain lengths turn up in the measurement of magnitude, incommensurable as such but commensurable in square, that call forth a peculiar application of number, one which inserts greater and lesser values in such a way that they become more and more equal. This use of numbers comes to light only in measurement science, and hence only in the mixed category of beings; it does not suggest itself in the operations of pure arithmetic, the science of the class of the limited (governing numerable, discrete quanta and their formal equivalents, like commensurable lengths). An indeterminate dyad is a numerical description of

a peculiar kind of length, neither irrational nor rational, but belonging to a third analytic class called “expressible.”

The mathematical subtext of Socrates' proposal therefore runs as follows: the distinction between unlimited, limited, and mixed is, after all, a descriptive one based on that between magnitude, number, and measured magnitude. But when Socrates attempts to bring unity to each category, drawing together into one (εἰς ἓν, 25a, 25d, etc.) the beings subsumed by each, he employs a three-part analytic distinction that applies properly to magnitude alone. That is to say, he brings unity to each of the three realms—number, magnitude, and measured magnitude—by describing each of them in terms of the particular kind of length, the particular kind of one-dimensional magnitude, which uniquely characterises it. Hence the class of the unlimited is not just the class of the greater-and-less, but the class which positively rejects numerical description, like that of the radically incommensurable lengths. (The analogy is strict, for recall that this class is said to reject from its own rightful seat both definite quantity (ποσόν) and the mean (τὸ μέτρον); on my reconstruction, this means it rejects the only two ways of counting lengths, either with a single number, or with an indeterminate dyad of numbers that approximate a geometric mean.) The class of the limited, likewise, is not just the class of numerable things, things which can be expressed as ratios of a number to a number, but also the class of certain kinds of magnitude, those which can be expressed as ratios of a measure to a measure, for commensurable lengths share all the properties of numbers. Hence the distinction between magnitude and number (unlimited and limited) can be reduced to a distinction between two kinds of line. And finally, the mixed class, or the class of the scale, though it includes within it the class of the limited, comes to be characterised by a use of numbers and a kind of magnitude which are each unique to it. These are the indeterminate dyad and the lengths which it measures, once incommensurable but now made “expressible” by the insertion of number. The expressible

roots form a third analytic possibility within the field of one-dimensional extension, alongside rational and irrational lines.

The reductionist spirit of Socrates' analysis is in the best traditions of ancient mathematics. To reduce one problem to another is of course heuristic of a solution, but the process can also be useful in definitions and classifications. An example has been given in Aristotle's reduction of the problem of squaring to that of finding a mean proportional line. One effect of Euclid's proposition II.14, which contains a solution to Aristotle's reduced problem, is in turn to reduce a comparison in magnitude between any rectilinear figures to a comparison between squares, and hence to a comparison in one dimension, between square roots. A later and particularly virtuosic example is to be found in Apollonius' use of the three kinds of application of area upon lines, the parabolic, hyperbolic, and elliptic, to both name and define the three kinds of conic section. In Plato's case, the distinctions between his ontological realms of the unlimited, limited, and mixed—two of which, as opposites, had had a long-standing currency in metaphysical thinking—have been reduced to the distinctions between the three kinds of line studied in the new measurement science: irrational lines that are incommensurable both in length and in square; rational lines that are commensurable both in length and in square; and the expressible lines that are incommensurable in length, but commensurable in square.

This analysis is also in the spirit of the “enumerative” method Socrates had earlier set out (16c-17a). One is to seek out the form (ἰδέα) which lends unity to a field of phenomena, and then seek out those things measured by this hypothetical unit-form (i.e., those phenomena which are “numbers” if the original form is taken as a unit). The method intends to be self-correcting, for one is enjoined in turn to analyse the original unit (τὸ κατ' ἀρχὰς εἶν, 16d) in the same way that one has analysed the enumerated phenomena, to see “how many” it might actually be. A converse procedure is equally espoused in the case of a science like grammar (18a-d): when the datum seems unlimited or continuous, as does the phenomenon of

human vocalisation, one is first to discover the *numbers* into which it naturally divides, which govern pluralities such as those marked out by the distinction between vowels and consonants, before one proceeds to analyse these further into their units. There may be an analogy here with modern analyses in terms of “sets,” which also presume that things need to be sorted before they can be counted or related. Euclid's definition of ratio (V.3) requires a relation of kind between the compared terms. Even the infinite field of number itself is nowadays divided in such a way that unitary types may be distinguished (“Reals” over “Rationals” and “Irrationals”) while individual members remain both infinite and infinitely instantiatable. An “enumerative theory of forms” would seem to reflect the ontological and epistemological implications of the interdependence of sorting, on the one hand, and counting or measuring on the other. The new Socratic method is developed as an explicit reaction to the Parmenidean or Pythagorean type of thinker—but also, perhaps, to the early Plato—who analyses everything in terms of opposed principles like the one and the many or the limited and the unlimited, and fails to articulate the crucial phenomena that are ordered, like numbers, in between such opposites. Hasty and simplistic analysis in terms of opposites is said to characterise arguments that are made eristically, while the enumerative method, the method that discovers the numbers of things and their ordered relations, characterises the truly dialectical approach (17a).

Socrates had earlier made it clear (14d-15c) that the familiar paradoxes of the one and the many were no longer his concern. Any lazy riddler could prove that an individual like Protarchus, or a thing made up of parts, was at the same time one and many. It was the possibility of *formal* unity, in the face of the sensible births and deaths of numberless individuals, the unity that is asserted of things in discourse—whether of “man” or of “ox” or of the beautiful or the good—that was of vital philosophical interest. Did any such units exist? How might *they* persist as individuals? And how is it that they partake of the infinite multiplicity of things that come into being? The genuineness of these perplexities calls forth

his enumerative approach, a philosophical pathway that Socrates says he had ever loved, but which had often deserted him in the past (16b). The method is hard, but the results can apparently be astonishing; *all* the achievements of the arts (τέχνων) are said to have been discovered on this road (16c).

The implications of this method, shot through as it is with the influence of the burgeoning measurement science, are staggering for the “classical” Plato. Consider that we are here hypothesizing the existence of forms as measures, enumerating phenomena in terms of a posited unit-form, and then examining the posited unit, presumably against the phenomena themselves, to check for its possible plurality. The method itself is therefore mixed, in such a way as to cancel Plato’s earlier formulations. Neither is this the unhypothetical reasoning from forms to forms, whatever that may have meant in *The Republic*, nor is it a reasoning from unquestioned hypotheses, in the manner of synthetic geometry. The once eternal forms, the objects and immutable guarantors of knowledge, have become provisional and heuristic.

God is said to have made all beings out of the one and the many with the limited and the unlimited as innate possessions (16c). This would tend to insure that all phenomena will be inherently numerable, and hence to guarantee their susceptibility to an enumerative method; we shall find the unifying form, for it is in there (εἰρησεν γὰρ ἐνοῦσαν, 16d). It is as though the pairs of opposed ontological elements, once the principles of the eristic disputations, have now been “re-packaged” in the premises, made the condition for the possibility of an enumerable reality. Inasmuch as it was Aristotle’s understanding (*Metaphysics* M.4, 1078b12) that the theory of forms was invented in the first place to account for our sense of dependable knowledge in the face of a Heraclitean flux—and note that the premise of a reality in flux is still accepted at *Philebus* 43a—it seems that this theory has now been modified to make sense not so much of our ability to know as of our ability to count. And this change of purpose is sparked in turn by a renewed confidence in this sovereign ability, in light of Theaetetus’ successful attack on

the irrational. Number had at last been restored to some of her Pythagorean glory, as a measure of the things that are, that they are, and the things that are not, that they are not, and what is more, of the things in between. The victory here was sweet indeed, for the irrational square roots were recovered from the domain of flux and incommensurability on the very terms by which this domain is distinguished. The indeterminate dyad is both a measurement and a process of measurement: interpolating means between means involves a measurer and a thing measured which are continually changing, just as in the Heraclitean or Protagorean contentions; yet this *process* of itself yields a unique measure of the fixed mean proportional between the interpolated means, and makes expressible and commensurable the once irrational root of a rectangular number.

Indeed, this process of measuring or counting in an indeterminate dyad has proved to be revelatory of form, in the sense that it creates the class of the expressible and defines the mixed category of being. On the one hand, things need to be sorted before they can be counted, and hence the knowledge of form has primacy over measurement, and the ability to count depends upon the ability to know. But it would seem in this case that the act of measurement can itself be disclosive of form, and hence that knowing can depend on counting. There appears therefore to be a dialectical relationship between sorting and counting, which is reflected in a self-correcting, enumerative theory of forms. This methodology of the *Philebus* can be seen as reincorporating certain aspects of the Pythagorean, in the sense that once again, knowledge has become coordinated with measurement, and to know something is in some sense to comprehend its number.

Confidence in the grounds of an enumerative approach to the sensible world—a confidence that may once have deserted Socrates in the face of an irrational diameter, leading him, with Meno’s honest slave, to the abyss of irony—can allow that significant guarantees of veracity will come from the method itself. There are, for example, different ways to “count” or measure a phenomenon,

each of them legitimate, based on the premises and aims of the investigator, as the several alternate divisions of the sophist and the statesman make clear. One measure of the truth of a hypothesis, that such-and-such a form is a genuine unit, must, under this method, be the economy and scope of the enumeration it affords, as a unit in fact. A criterion for a successful articulation, a guarantor that a dialectical enumeration corresponds to a real one in the world, must therefore be the *elegance* of that articulation, in terms of the economy of means and breadth of cover which problem-solving mathematicians have always striven for in the concrete practice of their art.

Indeed, it is an informed sense of respect for developments and concrete formulations in the arts that seems to move the older Plato. In the spheres of grammar and music, for example, although it appears that an abstract analysis in terms of opposites, in the manner of the σοφοί, may to some extent be applied in the interpretation of phenomena, by itself such abstract analysis simply does not make you much of a useful theorist (17b-c). An investigation into the numbers and kinds of sounds, on the other hand, or an enumeration of the different scales and modes and the vagaries of rhythm—these, it seems, can truly render you wiser than the common run, in music and in grammar.

Behind this sensitivity of Plato's to the enumerative and the concrete aspects of the arts, as against the approach through dogmatic first principles, may rest his experience of the dramatic changes in the mathematics of his day. A distinction like that between the rational and the irrational, which must have seemed as basic to the science as that between odd and even numbers—an eternal, immutable opposition, seemingly a part and principle of the order of things—was made obsolete by the emergence into history of a new formulation through the mind of a single, brilliant practitioner. Recall that Theaetetus' reforms began very humbly on the level of classification and definition: he makes the distinction between square and non-square the basic one for number, beyond the distinctions between, say, odd and even or prime and compos-

ite. But of itself this suggests a new way to approach the measurement of lengths, as geometric means, and this further yields, or reveals, a third, formally distinct category of magnitude called expressible. Experiencing this revolutionary development, as witness or participant, must lead a thinker away from a view of τὰ μαθηματικά as eternal, innate verities that can be investigated and learned as though by recollection, towards a view of mathematics that must acknowledge the importance and ingenuity of the problem-solver *in situ*, together with the power of classifications, definitions and measurements to reveal, or to obscure, the fundamental nature of their objects. As the traditional theory of forms and the doctrine of μάθησις ἀνάμνησις can be seen as responding to the ontology and epistemology of the earlier geometry, so can a self-correcting, enumerative theory of forms be seen as a response to the ontological and epistemological implications of the new mathematics and a dynamic measurement science.

Insofar as other arts aspire to the mathematical, the new philosophical outlook must also apply to them; although, to be fair, the provisional, enumerative approach would have long since guided the formulations of practitioners in music and grammar, without a felt need for a mathematical paradigm or a philosopher's blessing. Perhaps one should credit Plato only with waking up to the new realities of science and art around him, much in the spirit of later revolutions in philosophy. One need not qualify, however, one's estimate of the implications of this change of view for Plato's political thought; they are as great as the differences between the *Republic* and the *Laws*. In this vein, while Plato's guardians had learnt their lessons and then interpreted the world, so that nature and politics alike would have been for them a kind of applied mathematics, Plato's statesman is of an altogether different mould of mathematician. He is a problem solver, in amongst it like a navigator or a physician, who must be able to adapt his laws to suit changing conditions, or improve upon his formulations to serve the present (see *Politicus* 295c ff., 300c). It is of course notorious that the guardians' inability to solve a problem—the numbering of love, and

its irrational quantities—leads inexorably to the degeneration of their regime.

* * * * *

In *Metaphysics* N, Aristotle introduces his redaction and criticism of the Platonist (or Academic) metaphysics with this statement: “All thinkers make the principles opposites (πάντες δὲ ποιούσι τὰς ἀρχὰς ἐναντίας, 1087a30).” There appear to have been various schools of thought among Academic ontologists, all of whom posited the unit as a first principle or “element,” but each of whom disagreed as to the nature of the opposite principle, whether it was the “greater-and-less” or the “unequal” or “plurality”. Aristotle makes short shrift of all these formulations, as they treat affections and attributes and relative terms as substances (1088a16). In N.2, he mentions a group who posit the indeterminate dyad as the opposed element, as a way of getting around some difficulties in the other versions; but it is still a relative principle, and in addition, all these formulations fall to Aristotle’s argument that eternal things simply cannot be composed of elements (1088b28-35).

Aristotle then feels, before he adumbrates his own approach to ontology, that he must explain why these thinkers ever came up with formulations so narrow and forced, constrained as they are by the dogma of opposed principles (1088b35 ff.). His answer is that they had framed the problem of ontological multiplicity in an old-fashioned way (ἀρχαϊκῶς, 1089a1-2), for they were still arguing in response to certain paradoxes of Parmenides. The implications of this reconstruction of recent intellectual history are decisive both for our sense of Aristotle’s access to Plato, and for our knowledge of Academic thought and its relation to Plato. *All* the Academics, and thus Plato as well, are said to reason about existence in terms of an opposed pair of first principles—always the unit and something else; they do this under the direct influence of Parmenides, perhaps as part of a tradition of arguing against certain eristic dogmas of his, such as the one which Aristotle quotes:

οὐ γὰρ μήποτε τοῦτο δαμῆ, εἶναι μὴ ἔόντα

For this may never be enforced, that things which are not, are.

These thinkers are said to have felt that the possibility of multiplicity in the world would be threatened unless Parmenides were refuted, and some other thing than unity or being were allowed to exist. This was the origin of the “relative” principles that stood opposite the unit. The unit and the indeterminate dyad, on this scheme of Aristotle’s, are but one alternative among several pairs of first principles proposed by different Academic philosophers.

The first thing to note is that the *Philebus* itself is Plato’s direct and unambiguous criticism of the ontological reasoning based on two opposed principles, in favour of a technical, empirical, enumerative approach. From the perspective of philosophical method, the dialogue can hardly be said to have any other point. Plato conceived of his enumerative method as a more illuminating and more useful way of articulating phenomena, which comes to yield significant new categories in the analysis of being (e.g., the mixed one and the cause of mixing). No further clue seems to be necessary for the conclusion: Aristotle, somehow or another, has entirely missed the point of Plato’s late formulations, by classing them with the type that Plato himself characterises as eristic rather than dialectical, and from which he most particularly wants to distinguish his own.

The next point, however, is that there must actually have been a vigorous tradition of thought which both preceded Plato and outlasted him *in his own Academy*, characterised by the use of opposites as first principles. To believe so much is the only way to attach any seriousness to Aristotle’s redaction. This tradition originates with Parmenides, and must once have included Plato in its ranks, again if one is to pay any respect to Aristotle’s judgement. But Plato came to argue against such thinkers not only in the *Philebus*, but also in the *Sophist*, where they are called “the friends of the forms (οἱ τῶν εἰδῶν φίλοι, 248a).” These were the lat-

ter-day champions of eternal, immutable, unmixing forms, the kind of weary theoretical construct that is often now taught as Platonism. When the differences seem so clear, the question must become: How could Plato's new "mixed" ontology have come to be confused with the old-fashioned approach through polar principles?

Recall that on my reading of the *Philebus*, there are for Plato three ontological realms apart from the agent of cause. The first is the realm of the limit, the realm of arithmetic, whose principle is the unit. The second is the realm of the unlimited; its principle, analytically opposed to the unit, is the dual greater-and-less, the principle of irrational flux. The third realm is that of the mixed beings, which I have interpreted as the realm of measurable things. Its principles are two, and reflect the two ways that magnitudes may be numbered or made commensurable, absolutely in terms of the unit or relatively (but uniquely) by an indeterminate dyad. The thing to note is that the unit appears as a principle twice in this scheme, opposed in *two different ways to two different things*. The distinction between the unit and the greater-and-less is strictly analytic, and belongs squarely in the Parmenidean tradition; whereas the distinction between the unit and the indeterminate dyad is merely descriptive, serving to recognise ways of applying numbers inside the sphere of measurement that happen not to arise in arithmetic. The unit and the dyad are therefore not opposites; they are simply different.

If a thinker in the Parmenidean tradition, or a historian of the Parmenidean tradition, were to interpret Plato's scheme in light of their own practices, or to force it into a Parmenidean mould to flatter a historical premise, the conflation of the two distinctions would be an inevitable result. If the *Philebus* could not be consulted—if it were ἄγγραφος in the sense "unpublished"—no recourse could be had to the original reasoning; but even if there were such recourse, Plato's three realms of number, magnitude, and measure, and the important differences between the distinctions unit/greater-and-less and unit/indeterminate dyad, could only be understood in light of

an underlying mathematical paradigm, as I have argued. Such a thinker or such a historian would not be likely to know or to care about the analytic possibilities in one dimension. (This is as much as to say, he would not know what was meant by the indeterminate dyad.) He will look for the polar principles in any ontological scheme; at best he will see that the indeterminate dyad must connote something different from the greater-and-less, as the principle chosen to stand opposite the unit. But he will never envision a scheme that encompasses *both oppositions*.

The question next to ask is whether it was his Academic sources, or whether it was Aristotle himself who did not understand the mathematical meaning of the indeterminate dyad. There is intriguing evidence in *Metaphysics M and N* for the latter interpretation. It would seem that his sources were in the dark about this too; but whatever one concludes about the Academy, there is evidence that Aristotle had Plato's accounts at hand either to quote or to paraphrase, and that he could not make sense of them.

In N.1 (1087b7 ff.), Aristotle mentions a group of thinkers who attempt to generate the numbers, οἱ ἄρτιμοί, from the "unequal dyad of the great and small," taken as a material principle in relation to the formal "one," and someone else who would generate them from the principle of plurality. (He probably intends, respectively, the followers of Plato and Speusippus.) The generation of numbers does not seem to have been a concern of Plato's, however; the "problem" of multiplicity, or of how things can be both one and many, which when posed by Parmenides might have led his successors to theorise in the abstract about the generating of numbers, seems to be regarded in the *Philebus* (14c-15a, 16c-17a) as merely a staple of the eristic paradoxes, now subsumed within the premises of Socrates' concrete enumerative approach. Which is to say, it appears that Plato is no longer so interested in number theory as he is in simply *counting*. I am therefore inclined to think that neither the above-mentioned group nor the 'someone else' represents Plato's line of argument, or Plato's understanding of the unequal dyad. Aristotle bears this out by going on immediately to mention

an *individual* who speaks of the one and the unequal dyad as ontological elements (1087b9), thereby distinguishing him from the group who had used them (afterwards, I presume) as formal and material elements in the generation of numbers. Aristotle's complaint about this individual is that he does not make the distinction that the unequal dyad of great and small is one thing in formula (λόγῳ), but not in number (ἀριθμῷ).

Why would not Plato have made this distinction? The unequal dyad is not one thing in formula alone: the successive pairs of interpolated numbers relate uniquely to *one object* as well, the side of the square that is their single geometric mean. Further, since it consists of successively more equal sides of a single rectangular number, the dyad can quite emphatically and strikingly be said to be *of one number*, with a rationale that Aristotle might have appreciated if he had been more familiar with the construction.

On this model of progressively "equalised" rectangular numbers, we have a transparent motivation for the original formulation of terms like "unequal," "indeterminate dyad," "greater-and-less-er," and "exceeding and exceeded," which find their way into the theories of Plato's followers. In addition—and this point would seem to be decisive for the interpretation—we should expect to find them opposed in this context to a concept of the unit which is associated with the square or "equal". On no other grounds but those of the new measurement science, as I have described them here, would such an association be expected. Sure enough, the unit in these theories is described as the equal (1087b5, 1092b1), in such a way as to mystify not only Aristotle but also modern interpreters of these passages.

Neither Aristotle nor his Academic sources seem to connect these various expressions with geometrical representations of number; the theories on the generation of numbers betray no influence of Theaetetus' square/oblong distinction, nor of the geometrical interpretation of number that is settled convention by the time of Euclid. The Academics seem to have posited "ideal" numbers which were generated individually in succession (two, three, four, as

Aristotle says in M.7 1081a23, and so without distinction as to square or oblong) from the unit and the indeterminate dyad. Aristotle takes some pains to make sense of this theory: if the units (monads) of ideal numbers are all the same and addible, then they are not ideal at all, but normal mathematical numbers (cf. 1081a19); but if the monads of each ideal number are distinct and inaddible, they must be generated before each of their respective numbers can be generated, as a point of logic (1081a26 ff.). This is true no matter how these monads are generated; but Aristotle once more quotes "he who first said it" (ὁ πρῶτος εἰπὼν, 1081a24)—again distinguishing him from those who later used such phrases as the "unequal dyad"—to allude to a possible mechanism for this generation of inaddible monads (ἀσύμβλητοι μονάδες): they arise out of unequals, once these are equalised (ἐξ ἀνίσων ἰσοσθέντων γὰρ ἐγένοντο).

To begin with, Aristotle cannot rightly make attribution to anyone of a theory on the generation of inaddible monads. As he says, no one actually spoke that way (1081a36). Aristotle, perhaps himself in reaction against the eristic movement, constructs these arguments to save his opponents from the obvious fallacy of *ideal* numbers composed of normal, identical, addible monads; yet the alternative, unstated by them, but which he says follows reasonably from their own premises, turns out to be impossible as well, if truth be told (1081b1). There is therefore no reason to suppose that Plato thought or said that the generation of inaddible monads, or any monads, was connected with his notion of the unequal. On the contrary; Plato seems to have anticipated Aristotle's notion of the unit as a measure, both in the intuitions of the enumerative method and in the specifically mathematical context. At 57d-e, the distinction is made in the *Philebus* between the units of the arithmetic of the many, which change as different things are counted, and those of the arithmetic of the philosophisers, which are always identical. It would of course have been an easy (but pointless) solution to the problem of the irrational to say that incommensurables are simply measured by different unit lengths than commensurables.

The enumeration of Theaetetus and Plato, on the other hand, is predicated on the assumption of identical units. While some lengths still remain incommensurable on these terms, all the formerly irrational square roots become expressible through an indeterminate dyad, and the achievement of this articulation would be lost without the assumption.

What *can* be attributed to Plato, however, is that his notion of the unequal involved a process of equalizing it. In neither place in *M* where Aristotle mentions this idea (as above, and at 1083b24) can he make anything of it, nor does it seem to have any intuitive connection to the Academic number-generation theories he covers there. The only conclusion, I suggest, is that Aristotle refers to this conception of the unequal merely because he knows it to have been true of Plato's thought. The "Platonists" speak of the unequal as a generative principle, Aristotle might have reasoned, and who knows what they mean, as to *how* it generates; Plato himself also spoke of the unequal, and the only action he attributed to it was "being equalized"; perhaps this was somehow the "generating action," as obscure as that seems; one ought therefore to mention what the old man said, in fairness to them. In *N*, Aristotle for the first time mentions a number-generation theory which did, perhaps, try to interpret the process; it first declares that there is no generation of odd numbers at all, and that the even numbers are generated out of the great and small when these are equalised. Aristotle's criticism of the logic of this account verges on the sarcastic: φανερόν ὅτι οὐ τοῦ θεωρηῆσαι ἔνεκεν ποιοῦσι τὴν γένεσιν τῶν ἀριθμῶν. ("Clearly, it is not on account of philosophical theorizing that they produce their generation of the numbers." 1091a29) Neither Aristotle, for whom the notion seemed fatuously self-contradictory, nor these latter theorists, for whom it was received dogma, could have known the original mathematical context, for neither could interpret or properly apply the notion that the unequal as an elemental principle involved a process of being equalized. We can now restore the context, in the process of "equalizing" an unequal, oblong number with an indeterminate dyad of more and more

equal rational factors. (It is particularly striking that these latter Academics seemed to know that the notion "unequal-when-it-is-equalized" served in such a way as to divide all numbers, but they tried, with dismal consequence, to apply it to the familiar, venerable distinction between odd and even; they must have been unaware of the division of numbers by square and oblong, which supplanted the earlier distinction in the course of Theaetetus' study of irrational roots, and where alone the notion of the "equalized unequal" has any use or coherence.)

"Those who say the unequal is some one thing, making the indeterminate dyad from great and small, say things that are far indeed from being likely or possible," in Aristotle's view (*M*.1, 1088a15). He complains that to adopt such ideas is really to adopt his lowly Category of the "relative" as a substantial, unitary first principle. Something is great or small only in relation to something else. Unlike the superior Categories of quality and quantity, which have more substance because they involve absolute change, whether by alteration or increase, there is no such change proper to the Category of the relative. While a compared term may remain substantially the same, it becomes greater or less merely by quantitative change in the other term. Aristotle is therefore at a loss as to why such metaphysical honour should be paid to concepts that are inherently relative.

Plato could have replied: "Consider the nature of measurement toward the generation of the mean." In this process, the relative terms do not depend simply on each other, but both are related to an unchanging third thing, a single geometric mean. Furthermore, the pairs of relative terms are uniquely related to their proper mean, the root of a particular oblong number. And because the greater and lesser lengths approach closer than any given difference to the unchanging length of the root, their status in relation to this length, qua members of an infinite succession of approximating pairs, poses a heady puzzle for any common-sense idea of their ontological difference from, or identity with, this single length. There is therefore every reason to see the indeterminate dyad of great and small, a self-

correcting binary approximation of a single geometric mean, as a unitary and substantial thing in its proper mathematical context. But if the context was lost, and one had access only to the words in its name, then Aristotle's objections might seem judicious.

That Aristotle knew about the geometry of means is clear enough, but he must not have been familiar with the interpolation of means in the peculiar configuration of the indeterminate dyad, where means become extremes, which in turn beget means, which then in turn become extremes, while each pair of harmonic and arithmetic means serves as the extremes to the geometric mean in the middle. The notion of relativity embodied in this configuration, involving a process of equalising, and motion towards a fixed object, is more subtle and peculiar than that involved in a simple comparison, or even a static analysis expressed in terms of a mean and extremes. I claim it is this peculiar conception of the relative that Plato raised to the level of a principle, to stand in tandem with the absolute measure connoted by the unit.

While the Academic metaphysicians may appear to have used these very same principles, right down to the letter of their formulation, it is clear that neither they nor Aristotle grasped their proper function. They have nothing to do with accounting for multiplicity in the universe, or with the generation of numbers. They have everything to do with the *measurement* of numbers. After *Theaetetus*, numbers are figured as square or rectangular; they can be compared not only in quantity, but in size, by the length of their square roots, just as after Euclid's II.14, any rectilinear figures can be compared by the sides of their equivalent squares. While all numbers have either absolutely or relatively measurable root-lengths, not all lengths have countable squares. This is one of the odd new ways that arithmetic and geometry, number and magnitude, become interlinked after *Theaetetus*' happy reformulation.

It is therefore in this context, the context of measurement, that Plato is likely to have distinguished the absolute from the relative, being-in-itself from relative being. Aristotle alludes to just such a distinction, in a passage which once again exemplifies his peculiar

mire: he wants to review the Academic theories on the generation of multiplicity based on certain contrary principles, including principles first conceived by Plato, but conceived in a context where in some cases they weren't even contraries, and where they had had nothing to do with generating either multiplicity or numbers; he knows the language of Plato's own articulation of these principles, but doesn't have the mathematics to interpret the words. In this case, he may even foist his own innovations in usage back on to Plato's original phrases, just to make sense of them.

At 1089b16, Aristotle once again invokes "he who says these things," claiming this time that this person had also proved for himself (προσαπεφήνατο) that that which was potentially a "this" and substance (τὸ δυνάμει τὸδε καὶ οὐσία) was not "existent in itself" (ὄν καθ' αἰτό); it was the "relative" (τὸ πρὸς τι). What the expression "potentially a 'this' and substance" may have meant for Plato is a difficult thing to determine. In particular, Aristotle seems to take δυνάμει, with obvious anachronism, in his own characteristic sense of "potentially"; he had just now used the word this way when introducing part of his own familiar solution to ontological analysis, that we must hypothesize in each case what a thing is potentially (ἀνάγκη μὲν οὖν...ἵπποθεῖναι τὸ δυνάμει ὄν ἄκαστω, 1089b15-16). Perhaps Aristotle is here weaving his own terminology into the Platonic materials? But his next comment is a scholium, on Plato's appropriation of the term "relative," that it is just as if he had said "quality" (ὥσπερ εἰ εἶπε τὸ ποιόν); and there was never a scholium without a text.

So what could the Greek text "τὸ δυνάμει τὸδε καὶ οὐσία" have meant to Plato? Recall Knorr's observation that δύναμις and δυνάμει mean "square" and "in square" throughout Greek mathematical literature. (The only exception is the very passage in the *Theaetetus* [148a] where the eponymous hero applies the term δύναμις, for the first time, to a square root.) Thus in Plato's context, the same words may well have signified "that which has particularity and existence in square"—i.e., that which is countable (because it is commensurable) only in square (δυνάμει), like

the expressible as against the rational lines. It is these very magnitudes which one could expect to find distinguished as relative in their being, insofar as their being depends on their measure; the rational lengths, on the other hand, have the self-subsistent being of definite quantity, in length and in square, while the irrational lines, which cannot be made commensurable in either length or square, are captive to the realm of flux and non-being. If Plato equated “that which has being” with “that which can be counted”—and his enumerative method suggests a move in this direction—then it is entirely and specifically appropriate that that which has being in square be allowed only a relative existence. It has no autonomous number, but only a relative count. Even the phrase *πρός τι* may have had a specific connotation for Plato, which is lost in the anachronistic aura of the Categories; for such beings are measured by a process that is inherently *πρός τι*, “towards something,” measurement toward the generation of the mean. Plato’s distinction would have been between that which exists or is measured on its own terms (*τὸ ὄν καθ’ αἰτό*)—the equal, the square, and rational lengths—and that which exists or is measured toward something else (*τὸ ὄν πρὸς τι*), the unequal being equalized, the rectangle approaching the square, and the indeterminate dyad approximating the mean.

It seems clear that any such significance in these phrases could never have been allowed to emerge through the schemata of Aristotle’s redaction. He explains (1089b4 ff.) that in response to the diversion caused by Parmenides, the philosophers posited the relative and the unequal as the types of opposed principle which, when mated with being and the unit, generated a manifold reality. He points out, however, that neither of these posited principles is in fact the contrary (*ἐναντίον*) or the negation (*ἀπόφασις*) of being and unity; each is rather another single nature among the things that exist (*μία φύσις τῶν ὄντων*). This is also the point of his critical scholium on Plato’s use of the phrase *πρός τι*: the Category “relative” is no more a legitimate candidate than the Category “quality” for that contrary and negation of being and the unit which

the Academics were supposed to be seeking; each is simply “some one” of the beings (*ἐν τι τῶν ὄντων*, 1089b20). He goes on to complain that if Plato had meant to explain how things in general are many, he shouldn’t have confined his investigation to things that lie in the same Category (whether this be “substance” or “quality” or “quantity,” let alone the insubstantial “relative”).

The sense of this reading ranges from the misguided to the wilfully obtuse. In the first instance, we cannot fault Plato for failing either to prophesy or to apply the revolutionary insights into ontology expressed in Aristotle’s theory of the Categories. Nor can we fault him for not being interested any longer, as indeed he wasn’t, in the problem of how things are many. Still less can we fault him for giving up the reasoning by opposites. He would of course have agreed that his conception of the relative, in the configuration of the indeterminate dyad, is in no sense the opposite of the unit and its measure, but simply a different way of measuring, based also on the unit, that applies to certain types of being (i.e., certain two-dimensional numbers and one-dimensional magnitudes—oblongs and their roots). But the full picture of Aristotle’s plight as a redactor emerges when one throws in the fact that Plato’s complete formulation *did* in fact include a genuine opposition as well, between the unit and the greater-and-less *qua* greater and less. One then has a recipe for the peculiar quandary of Metaphysics M and N towards Platonic thought, based in part on unwitting conflation, but in part also on flagrant, self-serving anachronisms, and characterised by a haplessness in the face of Plato’s own expressions, when read in light of their borrowed use in the irrelevant theories of the Academy.

A question remains: where did Aristotle get those “texts” of Plato, which he seems to treat as quoted material? Although the distinction between absolute and relative being may be consistent with the *Philebus* and with other ontological discussions in the later Plato, the specific phrases which Aristotle comments on, such as *τὸ δυνάμει τόδε καὶ οὐσία*, do not seem to occur in the dialogues. Where, then, did Plato draw this mathematical distinction, and to

what did he apply it? Was it perhaps in a Lecture on The Good—a lecture which seemed to promise moral philosophy, but delivered mathematics—a lecture which nobody understood?

* * * * *

The mathematical development of ancient measurement science will prove much easier to trace than its philosophical obfuscation at the hands of Academics and Peripatetics. As forbidding as the structure of Euclid's *Elements* X seems to be, I believe its logic is profoundly simple, following directly in the spirit of Plato's enumerative method, and upon Theaetetus' geometrical interpretation of number.

After Theaetetus' first efforts had rendered all the square roots countable, he next sought to extend his classificatory net even further into the uncharted regions of the irrational. He could use his already successful methods as a paradigm: since exploring numbers in terms of the means between them had yielded the class of expressible lines, he was led to explore the possibility of means between the expressible lengths themselves, and the possibility of irrational means. While in general such means could not be "counted off," since the expressible lengths, treated as extremes, had not the fixed values necessary for a computation of means, the mean lengths could still be constructed and named with respect to rational lengths; just as at the time of the *Meno*, the root length of the double square could not as yet be counted, but it could be constructed within the unit square and was named "diameter" (or the "through-measure") by the professors (*Meno* 85b). Orders of irrationals could thus be defined in terms of means, though they could not be made commensurable.

Just such an assignment of orders is credited to Theaetetus by Pappus, in his commentary on *Elements* X, on the authority of Eudemos' history of mathematics (now lost):

...it was...Theaetetus...who divided the more generally known irrational lines according to the different means,

assigning the medial line to geometry, the binomial to arithmetic, and the apotome to harmony, as is stated by Eudemos, the Peripatetic.³²

The passage does not suggest that Theaetetus invented the three lines and their names, but only that he first saw the essential parallelism between the structure of their relations and those of the familiar means. The medial simply is the geometric mean between two expressible lengths. That is why it is called μέσος, the mean proportional; the name "medial" serves only to distinguish it in English. The binomial is a sum of two expressible lengths, and so can be associated with the arithmetic mean, which is half the sum of two rational lengths; but the apotome is merely a difference of expressible lengths, and the connection with the harmonic mean is less obvious. This also comes clear, however, as one recalls the fundamental feature of pairs of arithmetic and harmonic means which makes possible the measurement by an indeterminate dyad: if one applies a rectangle contained by rational extremes to the length of their arithmetic mean, the height of the new rectangle turns out to be the length of their harmonic mean. Euclid's X.112-14 illustrate a significantly parallel property of binomials and apotomes: if one were to apply the same rational rectangle to a length that was known to be a binomial, the height would turn out to be an apotome; further, and curiously enough, the expressible terms of such a binomial and an apotome would be *commensurable with each other*, and in the same ratio. If Theaetetus was responsible for these propositions, he might well have been led to view the binomial and apotome as "irrational means" between rational extremes, or as irrational factors of an oblong number, counterparts to the rational arithmetic and harmonic means.

It is clear, however, that Euclid's presentation is not designed as a theory of means. The bulk of his 115 propositions in Book X are concerned with enumerating and constructing twelve different kinds of binomial and apotome, making with the medial thirteen types of irrational line; the full list is given by Euclid after Prop.

111, before the proofs that establish the analogy between the binomials and apotomes, and the arithmetic and harmonic means. The rationale for this enumeration becomes more apparent if one considers David Fowler's handy grouping of the propositions:

- X1-18: general properties of expressible lines and rectangles,
- X19-26: medial lines and rectangles,
- X27-35: constructions underlying binomials and apotomes,
- X36-41, 42-7, 48-53, 54-9, 60-5, 66-70, & 71-2: blocks of propositions dealing with each of the six types of additive irrational lines. They are described in X36-41 and also, in a different geometrical configuration, in the Second Definitions following X47,
- X73-8, 79-84, 85-90, 91-6, 97-102, 103-7, & 108-10: blocks of propositions, parallel to the previous, dealing with each of the six types of subtractive irrational lines. They are described in X73-8 and also, in a different geometrical configuration, in the Third Definitions following X84,
- X111-14: the relations between binomials and apotomes,
- X115: medials of medials...

As Fowler himself observes, the propositions seem to represent an exploration of the "simplest operations of adding, subtracting, and squaring pairs of expressibles." Before Theaetetus classified them in relation to the different rational means, the binomial and apotome may have first been distinguished and defined as part of an investigation of the "arithmetic" of expressible lengths. An investigator might have said, if we are to understand the expressibles the way we understand numbers—and indeed, numbers are the very paradigms of our understanding—then we must comprehend their arithmetic; what might the manipulations of arithmetic look like when applied

to expressible lines?

Whereas the prospect of such an investigation might have daunted the most optimistic of researchers, with its seeming open-endedness and unlimited number of possible cases, Euclid was able, by manipulating squares and rectangles, to organize the infinite additions and subtractions of expressible lengths into six types each. Thus Euclid accomplished the first ever rigorous ordering of radically incommensurable lengths, as the sums and differences of expressible ones. One cannot measure these sums and differences as such, and so one cannot "count off" the irrational lines that are produced; but one can number their types, and enumerate their orders.

While the fundamental early propositions of Book X are generally credited to Theaetetus, and the propositions about mean proportionals ("medials") seem to suit his historical and mathematical character, the enumeration of the binomials and apotomes must belong to Euclid. Pappus says that Euclid, following Theaetetus, "determined...many orders of the irrationals; and brought to light, finally, whatever of finitude (or definiteness) is to be found in them." This should naturally refer to his ordering of possible binomials and apotomes, and the enumeration of six corresponding types. Though they do not depend on the proofs involved in Euclid's enumeration, Theaetetus' propositions, about the relations between binomials and apotomes, are then placed by Euclid at the end of Book X, so that they can be expressed in terms of that enumeration, and take on a new authority: each pair belongs to one of six sets of ordered pairs of binomials and apotomes whose terms turn out to be commensurable and in the same ratio; each pair consists of corresponding members of one of a finite number of possible combinations of additive and subtractive expressible lengths.

It is possible, then, to trace the genesis of Book X in this way: Theaetetus first extended the insights of measurement toward the generation of the mean by using the three means involved in that science as heuristic paradigms with which to interpret irrational magnitudes. Just as an expressible length is a geometric mean

between rational extremes, a medial length is a mean proportional between expressible extremes; and just as arithmetic and harmonic means are pairs of commensurable rational factors of the rectangle contained by the extremes of their interval, binomials and apotomes are pairs of *irrational* factors of the same rectangle. In his investigation of binomials and apotomes, Euclid discovered their classification, and thereby produced an ordering of irrationals in terms of possible types of sum and difference—an arithmetic of expressible lines. This in turn advanced the classificatory scope of Theaetetus' propositions on the relations between binomials and apotomes, when they were placed after Euclid's work, at the end of Book X. While Theaetetus could likely have proved that a rational area applied to a binomial produces an apotome as breadth, and that the terms of these irrational factors are commensurable and in the same ratio, Euclid could now add, as he does in the enunciations of Propositions 112 and 113, that such a binomial and an apotome belong to the *same order*.

David Fowler approaches the book from a very different angle, as part of his reconstruction of the ancient mathematics of ἀριθμητικῆς ἀνθυφαιρέσεως. He proposes an *anthyphairctic* theory of ratio, where ratios between quantities are described by counting the number of mutual subtractions which can occur between them: one counts the number of times the lesser subtracts from the greater, then the number of times the remainder can be taken away from the lesser, then the remainder of that transaction from the former remainder, and so on; the list of numbers thus produced gives a unique description of the particular ratio. He finds evidence for the historical existence of this approach in several quarters, including a direct allusion in Aristotle's *Topics* to a definition of same ratio as same *antanairesis*; and he sees the peculiar implications of this ratio theory as providing the most economical of many proposed rationales for the total sequence and layout of Euclid's Book II. The most surprising fact he uncovers is a remarkable periodicity that arises in the *anthyphairctic* description of ratios of the form $\sqrt{m}:\sqrt{n}$ —that is, ratios of expressible lines.

The achievement of Fowler's work is to have rediscovered, and in some measure to have resurrected in our day, the *other* branch of measurement science, measurement πρὸς ἄλληλα. The periodic repetition of the terms in the otherwise infinite mutual subtraction of expressible quantities would have been the great discovery of this science; as Fowler observes:

Those ratios that can be now completely understood and described in finite terms by the *arithmoi* include the ratios of the sides of commensurable squares, that is the ratios of expressible lines $\sqrt{m}:\sqrt{n}$...

Note how fitly this parallels the development I have described in the science of measurement toward the generation of the mean: those lengths which can now be uniquely measured in terms of the ἀριθμοί include these same expressible lines, the sides of commensurable squares.

As far as the rationale for Euclid's Book X is concerned, however, Fowler's reconstruction of the mathematics of *anthyphairesis* shows only why the relations between expressible lines would have seemed a thing worth investigating. We gain no insight into the specific form of the book as we have it, into its method and structure in the classification of the irrationals; these are better explained as an integral outgrowth of the new science proposed in Plato's *Politicus*, the science of measurement toward the generation of the mean. This is not just because Theaetetus is said to have classified the irrationals in terms of the different means. Consider that the entire investigative strategy of Book X, including the work I have ascribed to Euclid, is to manipulate squares and rectangles, a manipulation in two dimensions, in such a way as to distinguish and to enumerate the forms of the associated lines. This approach was born with the science of measurement toward the mean, on one fateful day. As he lies dying off-stage, the story is told of how the young

Theaetetus, Theodorus' student, on the day of Socrates' appearance in court, divided all numbers between the square and the oblong, and distinguished two kinds of line as the sides of squares equal to each kind of number. The "square side" of an oblong number is the geometric mean between the sides of the oblong. The names Theaetetus chose for these two lengths, μήκος and δύναμις, did not survive, for the implications of a classification by sides of squares made the distinction itself obsolete: both kinds of length would now be called ῥητά, expressible. But the technique applied in his classification was to direct the exploration of lines to its crowning achievement, in the enumerations of Euclid's Book X.

We ought, however late, to acknowledge the dramatist who saw the significance of such a day for history, saw it in a way that must combine the personal and the universal, the historical and the mathematical. Innovations in mathematics must have moved that man in a way that made even innovation in religion seem a distant charge, a memory of youthful import. We must come to recognise the changes in this chronicle of the human argument, as he took his bearings anew, and found new patterns, enumerative structures, emerging in a discourse that strains to keep pace—paradigms of order no longer laid up in heaven, yet resonant, perhaps, with a piece of divinity. His myth of the globe's reversal (*Politicus* 268d-274e) encompasses a deteriorating world, but also a return, through the numbering of its classes and kinds, to the elegance of god's tenure. Let him stand absolved at last of the mystifications of his followers: Plato's own measures, his own mysteries, must finally furnish our count.

NOTES:

1. Wilbur R. Knorr, *Evolution of the Euclidean Elements* (Dordrecht and Boston: D. Reidel Pub. Co., 1975), pgs. 65-9

2. Wilbur R. Knorr and Miles F. Burnyeat, "Methodology, Philology, and Philosophy," *Isis*, 1979, 70:565-70
3. Miles Burnyeat, "The Philosophical Sense of Theaetetus' Mathematics," *Isis*, 1978, 69:489-513, on pg. 513, pg. 513
4. Knorr, *Evolution*, pg. 192
5. *Ibid.*, pg. 192
6. *Ibid.*, pg. 69 ff.
7. *Ibid.*, pg. 96 (In full: "(a) The proofs are demonstrably valid. (b) The treatment by special cases and the stopping *at* 17 are necessitated by the methods of proof employed. (c) The proofs will be understood to apply to an infinite number of cases. (d) No use may be made of the dichotomy of square and oblong numbers in Theodorus' studies, either in the demonstrations or in the choice of cases to be treated. (e) Theodorus' proofs utilize the special relations of the lines in the construction of the *dynameis*. The geometrical methods of construction are of the type characteristic of metrical geometry as developed in *Elements* II and are closely associated with a certain early style of arithmetic theory. (f) But the arithmetic methods by which Theaetetus could prove the two general theorems, on the incommensurability of lines associated with non-square and non-cubic integers, were not available to Theodorus.")
8. Malcolm Brown, "*Theaetetus*: Knowledge as Continued Learning," *Journal of the History of Philosophy*, 1969, 7:359-79, on pgs. 367-8
9. Knorr, *Evolution*, pg. 158
10. This proof is given by Knorr, *Evolution*, pg. 184
11. *Ibid.*, pg. 159
12. see Euclid's *Elements* X Def. 3
13. see Plato's *Politicus*, 278b-e
14. see Euclid, *The Elements*, 3 vols., Vol. 3, ed. Sir Thomas Heath (Annapolis: St. John's College Press, 1947), pg. 3
15. see Euclid II.14 and VI.13

16. Brown, "*Theaetetus*," pg. 371 ff.
17. Proclus, *In Platonis Timaeum Commentaria*, 3 vols., Vol. 2, ed. Ernst Diehl (Leipzig: Teubner, 1903-6), pgs. 173-4
18. Brown, "*Theaetetus*," pg. 371
19. see David H. Fowler, *The Mathematics of Plato's Academy* (Oxford: Clarendon Press, 1987), pg. 14 ff.
20. see Plato's *Timaeus* 36a for this usage
21. The reading of B and T; editors usually read to)to
22. Brown, "*Theaetetus*," pgs. 376-7
23. *Ibid.*, pg. 377
24. see *Theaetetus*, 185c
25. Brown, "*Theaetetus*," pg. 374
26. quoted in Brown, "*Theaetetus*," pg. 373, note 38
27. Euclid, X.1
28. Brown, "*Theaetetus*," pg. 379
29. Julia Annas, Aristotle's Metaphysics *Books M and N*, Oxford: Oxford University Press, 1976, pg. 195
30. *Ibid.*
31. Knorr, *Evolution*, pgs. 65-9
32. tr. W.Thomson and G.Junge, in Fowler, *Mathematics*, pg. 301
33. Fowler, *Mathematics*, pgs. 169-70
34. *Ibid.*, pg. 192
35. tr. Thomson and Junge, in Fowler, *Mathematics*, pg. 301
36. Fowler, *Mathematics*, pg. 17 ff., and see Aristotle, Topics 158b
37. *Ibid.*, pg. 192
38. see *Ibid.*, pgs. 190-1



Moral Reform in Measure for Measure

Laurence Berns
(St. John's College, Annapolis)

To what extent are the principles of classical political philosophy and the American polity reconcilable? The Declaration of Independence did not mean, Lincoln tells us, that all men are equal in all respects. The Declaration, however, presupposes that the difference between man and man is never as great as the difference between man and beast, on the one hand, and man and God, on the other. This "equality" by superiority to beasts and inferiority to the divine sets limits both to human servitude and to human sovereignty.¹ These principles issue in the rule of prudence that just government derives its authority from the consent of the governed. This equality, as Locke put it, "in respect of Jurisdiction or Dominion one over another" is not incompatible with the classical principle of fundamental inequalities in capacities to govern. As a matter of fact the institution of free elections (the Declaration's "Right to Representation") introducing a principle of merit into the system is predicated on the existence of such inequalities of ability, and the capacities of electors roughly to discern them. (This does not, of course, mean that the judgment of the electors is always correct, but that it is sufficiently deliberate and well-informed to avoid disasters that would unhinge the very frame of government.)

The classical position on democracy has been put, I believe, with great clarity by Thomas Aquinas quoting St. Augustine:

If the people have a sense of moderation and responsibility and are most careful guardians of the common weal, it is their right to enact a law allowing such a people to choose their own magistrates for the government

Delivered at the Convention of the American Political Science Association, September 1993, The Washington Hilton Hotel, Washington, D.C.

of the commonwealth. But if, as time goes on, the same people become so corrupt as to sell their votes and entrust the government to scoundrels and criminals, then the right of appointing their public officials is rightly forfeit to such a people, and the choice devolves to a few good men. [*S.T.*, I-II, Q. 97, A. 1.]

I have no problem with this statement in principle, despite the questionable practicality of its remedy for corruption. As Benjamin Franklin put it, “If any form of government is capable of making a nation happy, ours I think bids fair now for producing that effect. But, after all, much depends on the people to be governed. We have been guarding against an evil that old States are most liable to, *excess of power* in the rulers; but our present danger seems to be *defect of obedience* in the subjects. There is hope, however, from the enlightened state of this age and country, we may guard effectually against that evil as well as the rest.” [Lett. to Ch. Carroll, 5/29/1789] What most threatens the required state of enlightenment today, it seems to me is not any paucity of economic resources devoted to education, but rather the reigning generally accepted opinions about what constitutes enlightenment. The Augustine-Thomas statement suggests, at the very least, that there is a natural connection between the will to preserve free institutions and the sense that those living in accordance with them are worthy of them.

How can a corrupt people be reformed? This, of course, is the problem set for its protagonists by Shakespeare’s *Measure for Measure*. Some distinctions between Duke Vincentio’s situation and ours must be made. He has a single city and its environs to reform, we have a huge and highly diversified nation. Our laws derive their constitutional authority from the very people needing reform, his do not. His polity is monarchical, ours is not. Our polity contains a diversity of religious sects, his does not. Religious authority and moral authority, if not united, form a well-functioning team in his regime, in ours ... they do and they don’t. Obviously we are not likely to find immediately applicable recipes from a study of

Measure for Measure. We are obliged to put things in constitutional terms: “the abuse of the first Amendment”; the tendency of lawyers and judges to ape intellectual fashions, sanctioning licentiousness with shallow-pate notions like freedom of expression, bargain-basement moral autonomy.² We can, as teachers, try to change the intellectual fashions. The only way I know how to do that is to try to rise beyond the realm of intellectual fashion altogether, by trying to understand the Duke’s problem as much as possible, as my better, William Shakespeare, understood it.

Vienna, the seat of the Holy Roman Empire, is ruled by a Duke, who “above all other strifes contended especially to know himself,... a gentleman of all temperance.” Like those two political defectives, Prospero and Socrates, he has no taste whatsoever for the theatrical pomposity endemic to political life. His apolitical temperament has caused him wrongly (“t’was my fault”) to allow Vienna’s strict and biting laws to become toothless and contemptible; licentiousness thrives, and “Liberty plucks Justice by the nose.”

His keen sense of justice prevents him from punishing in his own name evil deeds bred by his own permissiveness. But purification there must be. He appoints a Lord Angelo (soon to prove a Fallen Angelo), a man of “stricture and firm abstinence”, who “scarce *confesses* that his blood flows” to stand in for himself, that is (unlike American executives) to “enforce or *qualify* the laws.” But first something should be said about why someone like puritanical Angelo was needed.

The Vienna presented at first in the play seems to consist primarily of nunneries, monasteries and whorehouses, with almost nothing in between: the only family man presented is the absurd comic figure Elbow; austere celibacy, on the one hand, and saucy profligacy, on the other, again almost nothing in between. As sexuality is debased, celibacy, for some, gains in attractiveness. Something seems to be radically wrong with the way most Viennese think, feel and behave in regard to their sexuality. Immediately fol-

lowing Angelo's appointment the Duke pretends that affairs of state require his hasty removal to foreign parts; Angelo is on his own.

Political scientists (Bloom and Jaffa) quite properly refer to Machiavelli's *The Prince*, chapter VII, as the *locus classicus* for the Duke's mode of procedure with Angelo.³ Cesare Borgia on taking over Romagna found that because it had been very badly governed it was full of robberies, quarrels and insolence. To reduce it to peace and obedience he appointed a very cruel man, Remirro de Orco, as his deputy with full powers. Remirro soon reduced it to peace and unity. The reform being accomplished, in order to deflect the hatred it had generated from himself Cesare had the cruel Remirro placed one morning in the piazza at Cesena in two pieces, a piece of wood and a bloody knife beside him. The ferocity of the spectacle left the people both satisfied and stupified. Bacon speaks of this way of proceeding both in his *Wisdom of the Ancients* [III], and his *Essays* [XIII], but both seem to have been published after this play was first presented. One is tempted to go along with our scientific fashions and play at being "more hard-nosed than Thou," but the differences between Shakespeare and Machiavelli at least deserve listing. The Duke does not kill Angelo, though he had full warrant to do so; unlike Cesare with Remirro, the Duke is not interested merely in using Angelo, but also as with everyone else, including himself, making him better, reforming him; above all, since he is not omniscient, he is interested in understanding Angelo: "Hence shall we see, /If power change purpose, what our seemers be." It is not simply because he courts popularity, that he doesn't institute the reform himself, it is rather because he is not the right man for the job, and it would not be, or at least not seem, just for him to do so. There is another work of Machiavelli's that bears close comparison with *Measure for Measure*, that is *Mandragola*⁴; the Duke seems to combine characteristics of both Ligurio and Frate Timoteo, but here again the differences should prove instructive.

The Duke does not leave Vienna, he goes underground in the guise of a "holy friar" both to observe and invisibly to correct the course of his reform. Angelo evidently goes to work immediately:

the houses of prostitution are put down, and a young gentleman named Claudio is sentenced to death for fornication; for the woman he is engaged to marry (the marriage delayed by dowry problems), Juliet, is big with child. Angelo rejects the urgings of his second in command and his Provost that here the punishment is way out of proportion to the crime. Claudio has a high-spirited sister, Isabella, who has entered the austere order of St. Clare - "When you have vow'd, you must not speak with men /But in the presence of the prioress; /Then, if you speak, you must not show your face; /Or if you show your face, you must not speak"- as a novice. She wishes for an even "more strict restraint." We are, I suppose, to imagine her quite beautiful; her moral beauty at least engages the affections of the play's two main protagonists. She is urged by the dissolute gentleman Lucio to plead with Angelo for her brother's life. Despite her choosing to renounce family life, her's is the only powerful display of family feeling in the play. While hearing her plea the transforming event of the play takes place, Angelo finds himself possessed by an overwhelming passion, which, both to himself and to her, he calls love for Isabella. He, on second interview, proposes that she yield her body to him for one night in exchange for her brother's life.

The critique of Angelo would seem to be a critique of Puritanism in general. Licentious Lucio thinks Angelo "a man whose blood /Is very snow-broth; one who never feels /The wanton stings and motions of the sense..." This is surely wrong. The Duke had made a similar, but more penetrating, observation: "Lord Angelo is precise; /Stands at a guard with Envy; scarce confesses /That his blood flows..." If he must guard against envy, he feels the desires whose indulgences he must not be envious of. With old Escalus, before he has fallen, Angelo admits that he too has had the desires that lead to the actions he is punishing with death, acting upon them makes the difference. He is too good, at least too strict and too proud to consort with the dissolute; he proves to be not good enough to be celibate. He wants to be associated with the highly virtuous, is attracted by Isabella's purity; he wants to pre-

serve the image of his gravity; and he wants the joys of what he calls love: your brother shall not die “Isabel, if you give me love.”

He seems to be altogether confused about the difference between “yielding up thy body” and “give me love.”⁵ It was Isabella’s moving persuasiveness that led him to give more attention to the erotic side of his soul than he could handle: “Go to your bosom, /Knock there, and ask your heart what it doth know /That’s like my brother’s fault. If it confess /A natural guiltiness, such as his....” He replies to himself: “She speaks, and ’tis such sense /That my sense breeds with it.” [2.2.137 ff.] He did warn the Duke: “Let there be some more test made of my metal, /Before so noble and so great a figure /Be stamp’d upon it.” The Duke knows that: “He doth with holy abstinence subdue /That in himself which he spurs on his power /To qualify in others.” [4.2.79] The immoderate Puritan allows the bitterness from his own frustrated desires with perhaps a touch of envy to spur him on to punish those who will not abstain. The fear of falling into temptation increases the severity. The intensity of purifying zeal seems to be directly proportional to the difficulty one has in keeping one’s own illicit desires under control. The judgment is warped in the direction of severity by what one feels is required to frighten oneself into abstinence. Isabella’s loveliness and what he sees when he follows her advice and looks into his own soul push him over the edge.

And now I give my sensual race the rein:
Fit thy consent to my sharp appetite;
Lay by all nicety and prolixious blushes
That banish what they sue for. [2.4.159 ff.]

On reflection it might not seem so strange that modesty should provoke desire.

Any competent political scientist can figure out why Angelo never intends to fulfill his side of the bargain. Isabella can find no “charity in sin.” “More than our brother is our chastity.” The Duke disguised as Friar Lodowick prepares Claudio for death with a ser-

mon crammed with Stoic commonplaces on the worthlessness of life. From here on the Duke uses the holy privileges associated with his disguise to inform himself of everyone else’s secrets. He overhears Isabella’s account to Claudio of Angelo’s proposal. In another remarkable scene Claudio begins by sharing Isabella’s righteous, honorable and Christian indignation at the impossibility of Angelo’s plan. But he has been brought to face the fear of death in a very feeling way.

Death is a fearful thing.
...to die, and go we know not where;
To lie in cold obstruction, and to rot;
This sensible warm motion to become
A kneaded clod; and the delighted spirit
To bath in fiery floods, or to reside
In thrilling region of thick-ribbed ice;
To be imprison’d in the viewless winds
And blown with restless violence round about
The pendent world: or to be worse than worst
Of those that lawless and uncertain thought
Imagine howling, -’tis too horrible.
The weariest and most loathed worldly life
That age, ache, penury and imprisonment
Can lay on nature, is a paradise
To what we fear of death. [3.1.115 ff.]

Claudio’s speech is a beautiful illustration of that “very illusion of the imagination” beautifully described by Adam Smith: the way a man or woman’s sympathetic imagination attributes to the dead what he or she would feel being alive, if he or she were housed in the dead person’s body. And thus “the foresight of our own dissolution is so terrible to us, and ... the idea of those circumstances, which undoubtedly can give us no pain when we are dead, makes us miserable while we are alive.” The Duke certainly does not explain anything like this to Claudio or to anyone else in this play,

but I don't think he would disagree with the way Smith closes this chapter. "And from thence arises one of the most important principles in human nature, the dread of death, the great poison to the happiness, but the great restraint upon the injustice of mankind, which, while it afflicts and mortifies the individual, guards and protects the society." [*The Theory of Moral Sentiments*, I.i.1.13] Bloom quite properly refers to Lucretius [III. 417 ff.] in his discussion of this passage, but Smith, it seems to me, is more balanced, even more "classical".

Claudio goes on to plead:

Sweet sister, let me live.
What sin you do to save a brother's life,
Nature dispenses with the deed so far
That it becomes a virtue. [3.1.132 ff.]

This is not the first time Nature has been invoked to oppose chastity law. The licentious but eloquent Lucio puts it in a way that comes close to generally accepted opinion among our intellectuals.

Your brother and his lover have embrac'd;
As those that feed grow full, as blossoming time
That from the seedness the bare fallow brings
To teeming foison, even so her plenteous womb
Expresseth his full tilth and husbandry. [1.4.40 ff.]

The licentious have their say in this play. But Shakespeare has quite naturally, but not altogether explicitly, built Nature's answer to promiscuity into their very speech: it is full of the imagery and fear of venereal disease. The Duke seems to have come to the realization that Nature in human society requires law for its fulfillment.⁶

Isabella is moved by Claudio's speech, but in exactly the opposite direction. "O, you beast...faithless coward...dishonest wretch," she replies.

Wilt thou be made a man out of my vice?
Is't not a kind of incest, to take life [i.e., to be born

again]
From thine own sister's shame?
...Take my defiance,
Die, perish! [3.1.135 ff.]

This is not the first time sexual imagery enters Isabella's speech in moments of great passion. Answering Angelo she is primarily thinking of stripping herself for whipping:

Th'impression of keen whips I'd wear as rubies,
And strip myself to death as to a bed
That longing have been sick for, ere I'd yield
My body up to shame. [2.4.101 ff.]

The Duke's first task is to avert the great impending injustice brought on by his scheme, but he does it in a way that also seems to be perfectly calculated to bring Isabella to face her sexuality, and human sexuality in general, more temperately. His reform will turn out to be a comprehensive reform; all the representative characters, Pompey, Lucio, Claudio, Angelo and Isabella are in different ways reformed. The Duke uses the religious authority he has assumed to engage Isabella in a plot that will right all wrongs. Angelo, it turns out, had been engaged to marry a lady, Mariana. When her brother carrying her dowry was wrecked at sea, Angelo "pretending in her discoveries of dishonour" called off the marriage. This wronged lady, the "forenamed maid" has unreasonably been driven by his unkindnesses to a more violent and unruly love for Angelo. She still regards him as her "husband." Isabella is to agree to Angelo's terms, arrange for a short meeting in a very dark place; Mariana is to be substituted for Isabella. If the encounter is acknowledged afterwards, it may compel him "to her recompense." By this, the Duke argues, "is your brother saved, your honour untainted, the poor Mariana advantaged, and the corrupt deputy scaled." The Duke as friar will frame and make Mariana fit for the attempt. The fact that this seems to pose no special difficulty suggests that Mariana may indeed be as right as one can be to mate with Angelo. But it is too

easy these days to berate Puritanism, Mariana may just see some nobility in Angelo's austerity, a nobility that manifests itself to us as well even in his guilty self-condemnations. It can hardly escape Isabella's later reflection that what takes place between Angelo and Mariana is in many respects parallel to what took place between Claudio and Juliet. But this conjunction is sanctioned by a holy man, who declares that "the doubleness of the benefit defends the deceit from reproof." Isabella is happy to go along. Even the pleasure of revenge on Angelo seems to be sanctioned by this holy man. Isabella's imagination is invited with no impiety to receive scenes of her enemy coupled with his affianced lover, thinking he is violating herself. If her soul is puritanical, it will have to become Puritanism with a certain sense of humor.⁷

The Duke's plan for deceiving Angelo succeeds, but Angelo sends no reprieve for Claudio. On the contrary, he advances the time for his beheading. He has no interest in preserving the life of a man privy to his crime, and who, if he has the least grain of honor, would be bound to think of little else than revenge. The Duke, again using his assumed religious authority, attempts to get the Provost of the prison to substitute the head of a convicted murderer, Barnardine, for Claudio's, to fool the wicked Angelo again. The Duke had invoked "the vow of my order." The "gentle Provost" is the only one who refuses to bow to religious authority, "Pardon me, good father, it is against my oath." When the Duke, without fully revealing himself, is forced to prove he is acting not only by religious authority but by the authority of the Duke himself, the Provost goes along. He who refused to subordinate political authority to religious authority for his "care and secrecy" will be rewarded by the Duke with "worthier place." But Barnardine has been drinking and is not prepared for death today. He simply will not consent to die today. This is an amazing prison. They all agree that to take him in this condition is damnable. Luckily, the captive pirate, Ragozine, who resembles Claudio, has died that morning: the perfect head to substitute for Claudio's. Besides provision of some fine comedy, the prison scenes are essential for understanding

the Duke's basic strategy of reform. Pompey the procurer now put out of work becomes the prison's executioner's assistant. The servant of false love, venereal disease and the unlawful begetting of life quite easily becomes the true servant of its lawful taking. Pompey's coarseness is re-formed to serve the rule of law. The taking and the begetting of life have been connected before. Angelo declares:

Ha? Fie, these filthy vices! It were as good
To pardon him that hath from nature stolen
A man already made [a murderer], as to remit
Their saucy sweetness that do coin heaven's image
In stamps that are forbid. 'Tis all as easy
Falsely to take away a life true made,
As to put mettle [metal] in restrained means
To make a false one. [2.4.42 ff.]

As Jaffa put it, "Fornication, as a kind of false coinage of citizens, becomes more than a private action."⁸ The regulation of coinage, society's circulating medium, is usually a rather unquestioned prerogative of sovereignty. The penalties for counterfeiting have never been light. To "coin heaven's image" joins biblical sanctity of begetting to the need for sovereign political regulation of that private behavior which is the source of life for society as a whole.⁹ (The coining image occurs at least three more times in the play, in speeches by the Duke [1.1.35-36], Isabella [2.4.128-29] and Angelo [1.1.48-50].)

Threats of death color the whole atmosphere of the play. Fear of death in potential malefactors seems to be indispensable for the restoration and maintenance of law-abidingness. But absolutely no one ever gets killed in this prison. It is the genius of this Duke to be able to employ the fear without ever having to follow through with the act. The ploy would never work, if it became generally known.

The great final act and scene of the play pulls all strands together, the return of the Duke and resumption of his authority in a grand public ceremony, where the Duke "like power divine" reveals all hidden iniquities and resolves all difficulties with perfect justice.

This justice, both legal and natural justice, is primarily justice in marriage. For the chaste sexuality of marriage, the raising and nourishing of families under the law, is the solution for the sexual corruption of Vienna.¹⁰ The dissolute gentleman, Lucio, is forced to marry the prostitute who is the mother of his child. Angelo, who sought Isabella, who was too good for him, is ordered to marry and love the less scrupulous Mariana. But the Duke knows that the institution of marriage, upon which the health of his polity depends, will not be on a firm foundation unless it shines forth at the paradigmatic center of society. He too must marry, and marry well. The high-minded Duke asks the high-minded Isabella to be his wife. How that works out, we never learn. As part of the apocalypse the Duke staged for his triumphal return, Isabella was made to believe that her brother had indeed been executed. It may be that the Duke wanted her to weigh the events leading to that result more carefully, or merely, as he said, "to keep her ignorant of her good,/To make her heavenly comforts of despair/When it is least expected." He might be made to pay for those hours of despair. These reservations aside, it seems to be a near perfect marriage. If it should be that the Duke comes short of perfection by contemplative leniency and Isabella by spirited severity, it would be by the blending of their virtues and the mitigating of their defects in their shared lives or in their offspring that Vienna could hope to receive its perfect Lord.

NOTES:

1. Cf. H.V. Jaffa, *The Conditions of Freedom: Essays in Political Philosophy* (Baltimore: The Johns Hopkins University Press, 1975), pp. 152-53; G. Anastaplo, *St. Louis University Law Journal* (Spring, 1965), 390.
2. G. Anastaplo, "Censorship", *The Encyclopedia Britannica*, 15th Edition, 1986 printing, Volume 15, pp. 634-641; *The Amendments to the Constitution: a Commentary*, (Baltimore: Johns Hopkins University Press, 1995), pp. 52-56; R.A. Licht, "Respect is not a Right", *Crisis*, Vol. 11, No. 7, July-August, 1993, pp. 41-47; "Communal

Democracy, Modernity, and the Jewish Political Tradition", *Jewish Political Studies Review*, 5:1-2 (Spring, 1993).

3. A. Bloom, *Love and Friendship* (New York: Simon and Schuster, 1993), p. 330; H.V. Jaffa, "Chastity as a Political Principle: *Measure for Measure*", *Shakespeare as Political Thinker*, eds. J. Alvis and T.G. West (Wilmington, DE: ISI Books, 2000), pp. 211-12.

4. The most reliable and literal translation known to me is by M. Flaumenhaft (Prospect Heights, Ill.: Waveland Press, 1981).

5. Cf. W. Shakespeare, *Sonnets*, Nos. 129 and 116.

6. L. Berns, "Gratitude, Nature and Piety in *King Lear*", *Interpretation*, Vol. 3/1 (Autumn, 1972), Sections V and IX; "Rational Animal-Political Animal: Nature and Convention in Human Speech and Politics", *Essays in Honor of Jacob Klein* (Annapolis: St. John's College Press, 1976), pp. 29-35, esp. section III; [uncorrected version in *The Review of Politics*, Vol. 40, No. 2 (April, 1978), pp. 231-54.]

7. L. Berns, "Transcendence and Equivocation: Some Political, Theological and Philosophic Themes in Shakespeare", *Shakespeare as Political Thinker*, cited n. 3, pp. 402-4.

8. "Chastity as a Political Principle: Measure for Measure", citation n. 3, p. 221.

9. The *locus classicus* for the relation between private and public, polity and family is Aeschylus's trilogy *Oresteia*. The trilogy begins with a world where family feeling, the spirit of revenge and cycles of blood feuding dominate and characterize political and social life. Agamemnon, the triumphant leader of the Trojan expedition, is killed on his return to Argos from Troy by his wife Clytaemestra for the sake of "my child's Justice", that is, to avenge the death of their daughter sacrificed to propitiate the gods holding up the expedition to Troy. The ruling deities are the Old Goddesses, the Daughters of Night, the "ingrown, vengeful Furies." In the second play, Orestes, Agamemnon's and Clytaemestra's son, following the charge of Apollo's oracle, avenges his father's death by killing his mother. The Furies, "the bloodhounds of my mother's hate," pursue him. The third play, *The Eumenides*, the well-meaning ones, celebrates the founding of the Court of the Areiopagus at Athens. Orestes seeks sanctuary at Delphi. The Pythian oracle is overwhelmed by the pursuing Furies. Apollo himself inter-

venes and stills the Furies long enough for Hermes to guide Orestes to Athens for a final resolution of his case. At Athens Pallas Athene takes charge. She who was not born of woman (born from the head of Zeus), a most man-like female, almost a mean between male and female, turns the trial over to an open court of Athenian citizens. The Furies argue against, Apollo argues for Orestes; gods as advocates, before human beings as judges and jury. The jury of twelve human beings is given the authority to decide. The sovereignty of hitherto untamable family feeling is brought under the supervening authority of the polis, the *political* community. Although they have the authority, the human beings by themselves are incapable of deciding between conflicting rights of mother and father. The jury splits evenly. The deciding vote is given to the goddess Athene. Divine help is required for settling such questions. She decides for Orestes. It seems that reasonable procedures for settling and dispensing with problems may sometimes be more important than assurance that the solutions are correct. These questions are no longer to be dealt with violently behind closed doors but deliberately before public and open spectacles of law court, assembly and theater. The Furies are unwilling to accept these dispensations of the younger gods. By a combination of threats and persuasion Athene cajoles the Furies to integrate their authority over family feeling and the household into the service of the greater good of the political community. They shall “win first fruits in offerings for children and the marriage rite.” The Furies finally agree and are transformed into Eumenides. The feelings they preside over which are capable of tearing the political community apart cannot be extinguished: they are to be redirected against the despotically minded consumed by “a terrible love of high renown” and external enemies; they will bolster the mutual love of fellow citizens. “This is a cure for much that is wrong among mortals.” Cf. M. Flaumenhaft, “Seeing Justice Done: Aeschylus’ *Oresteia*”, *Interpretation*, Vol. 17/1, (Fall, 1989), pp. 69-109, reprinted in *The Civic Spectacle: Essays on Drama and Community*, (Lanham: Rowman and Littlefield, 1994), Chapter 1; and David K. Nichols, “Aeschylus’ *Oresteia* and the Origins of Political Life”, *Interpretation*, Vol. 9/1, (August, 1980), pp. 83-91.

10. L. Berns, “Gratitude, Nature and Piety in King Lear”, citation n. 6, p. 50: “... love and passion ... need to be controlled by law and authority. Being conceived outside the ‘order of law’, Edmund was banished from the family circle. He is not altogether ‘unnaturally’ devoid of family feeling.”

 A Review of Eva Brann's
The Ways of Naysaying
Chaninah Maschler

“The first impetus” for this study,¹ Eva Brann tells us in her Preface, was the desire to deepen her understanding of the two “capacities of our inwardness” that had been the themes of two of her previous books, *The World of the Imagination* and *What, Then, is Time?* “As the imagination ... *makes present* what is *not* before us by reason of nonexistence or withdrawal, so memory ... *holds* what is not with us by reason of having gone by.... Therefore... to understand something of imagination, memory, and time, we must mount an inquiry into what it means to say that something is not what it claims to be or is not there or is nonexistent or is affected by Nonbeing. And that is what I am after in *Ways of Naysaying*” (pp. xiif, my italics).²

Addressing, I presume, readers of the first two volumes of her trilogy, Brann explains that and why there will be less reliance on introspection and more reliance on logic and language in the present volume: “We could, it is thinkable, be aware of our internal images...without having language for them....But whether we could know about negation—*that* we are capable of it and *how*—without speech is doubtful to me. Hence within my scheme, *no*, *not*, *non-* are deeper than imagination and time, in the sense that the former underlie the latter and are revealed in their analysis” (p. xiii). Earlier in this paragraph, and in more detail later, when summarizing Freud’s essay “On denial” in her Chapter One, she allows that there is a pre-linguistic “nay-saying of instinct and gesture.”

Since this paragraph is rather condensed, and much hangs by it, let me try to say in my own words what I believe it to hold: *Doing* no, for instance, spitting out or pushing away or averting the gaze, occurs (ontogenetically and, according to Freud, also phylogenetically) before speech. And a sort of prereflective *reacting* to heard

Eva Brann’s *The Ways of Naysaying: No, Not, Nothing, and Nonbeing*. Lanham, Md: Rowman and Littlefield, 2001. Chaninah Maschler is tutor emeritus at St. John’s College.

“no,” or *even the uttering* of the syllable “no” (as mere substitute for the gesture of rejection) may well be a phase of children’s intellectual history. Further, having images and reacting to them, or to having had them, can occur without the one who reacts being aware that what he or she is reacting to is an image. But to peg an image as an image, which means, to take it as a likeness of its original, that requires, according to Brann, the thought “This *is and is not* that.” Therefore there can be no sizing up of a mirror image, memory image, dream image, perceptual presentation as “merely” an image until after negation has entered upon the mental scene. Now *knowing about negativity*, which is different from prereflectively *reacting in a rejecting or separating manner*, that could not occur sans speech. While images are, therefore, existentially “prior to” (earlier than) speech, in involving recognized negativity they show themselves conceptually “posterior to” speech.³

Brann seems to be employing some version of the Aristotelian contrast between “first to us” and “first in nature.” This is how I construe her claims that, while imagining and recollecting are more manifest, negativity lies “deeper” than do these “capacities of our inwardness”; and that, furthermore, whatever is condition for the possibility of negativity lies more deeply still. Her book as a whole will argue that the Platonic discovery that Being “holds” Nonbeing may well be the ultimate answer to the question “was die Welt im Innersten zusammen halt” (“what it is that most intimately holds the world together,” Goethe, *Faust* Pt. 1, li 383).

The Introduction of Brann’s book is given over to etymology. It draws attention to the fact that in English, German, French, Latin, and Greek (the languages in which the Western philosophic tradition is expressed), most of the basic words for naysaying—no, not, non-, nothing, and negativity—start with a nasal sound. Jespersen, and before him Darwin, remarked on this fact and entertained the thought that, conceivably, our signs for negation are transitional between naturally expressive gesture and conventionally learned word. The n-word would then

have originated as a substitute for the snort of aversion or refusal and in the course of linguistic and cultural history have proliferated into a multiplicity, the last but not least of which would be the abstract general negation word “not” we use for contradiction.

In Chapter One, Brann, like many of us today, seems to share Darwin’s impulse to give direction to speculation about human archai by studying child development. Accordingly, the title of her book’s first official chapter—“Chapter One, Aboriginal Naysaying: Willfull No”—refers initially to “the primordial ‘no’ to everything” of the toddler (p. 9), but eventually to other respondings (Goethe’s Mephistopheles serving, serio-comically, as paradigm) that reject, disobey, or spit out what is given. Thus some of the discussion of nihilism in Chapter Six looks as though it were continuous with Chapter One’s analysis of childish “no.” The toddler rejects the breast, the command or prohibition, the saying “so it is” of the grown-up; the nihilist turns down shared traditions, institutions, and even intersubjectively acknowledged matter of fact.

I loved the affectionate and knowing description of “the terrible twos” in this chapter. I share Brann’s admiration for Freud’s astonishingly potent brief essay on negation, which she summarizes, pretty much in Freud’s own words, on pp. 10-12. But it looks to me as though Freud’s quasi-Nietzschean “genealogy” of the intellectual function of judgment out of the interplay of biologically “primary impulses” has, when Brann is through with it, become tinted with Augustinian surmises of original sin. In evidence I cite the fact that it is rather late in the chapter (footnote 28, p. 22) that the “healthy naysaying” of resistance to temptation and of rebellion against tyranny are mentioned; also, that the emphasis on self-awareness’ emerging from deeds and words of “arbitrary willfulness” (cf. p. 18) does not seem to be balanced by reflections on the child’s need to exercise, so as to perfect, skill at matching expectation with outcome, and vice versa. What I have in mind is well-explained by Jerome Kagan. In brief, Kagan holds that much of what we

observe in the not quite two-year-old is made intelligible if we view it as due to the emergence of “three related competencies”: ability to notice that some happening or action is at odds with what is right and regular; absorption by the idea of standards as standards, both those set by others and those set by oneself; awareness of one’s own and the world’s ability or inability to meet standards. I am confident that Brann would agree that these competencies involve the child’s increasingly better memory: Isn’t much of the toddler’s “testing” of the world, commandeering of adults, and “first Adam”-like rage at the world’s or the grown-ups’ not coming through connected with practicing the ability to match outcome with forecast and plan, remembrance with presentation? It is my impression that Brann writes more nearly in this spirit in *What, Then, is Time?* (See p. 165).

The chief questions asked and answered in Chapter Two, where the *not* of logic is taken up, are as follows: 1. What is negation? 2. Where is the sentence negated? 3. Is the positive prior to the negative? 4. How is negation related to falsity?⁷

Following Aristotle, Brann assigns negating (the act) and negation (the act’s sentential consequence) to the genus of opposition. An admirable overview of types of opposition, as described and classified by Aristotle, is provided, while opposition in general is recognized to be indefinable.⁸ Plainly, the idea of not is clarified when, through insertion into its genus, it is made evident that not must be discriminated from fellow-contenders for naysaying primacy, for example, speaking linguistically, the particles non- or un- or a- and, speaking semantically (?), the polar relations of contrariety and privation. The not of contradiction is declared the winner, on Aristotle’s authority (p. 27). But, Brann hastens to add, contradiction, which is “sheer, unintermediated opposition” (studied as such under the heading of question 4), belongs to thinking and speaking, not to things.

We seem, perhaps contrary to expectation, to have ferreted out something like an answer to the question of what negation consists in. A summing up of the interim upshot of the inquiry into the

nature of not is provided on p. 29f. and concludes with the sentence: “Negation arises from the human desire and ability to make distinctions; it is (most likely) grounded in the oppositions and polarities that belong to beings....”

Where in the declarative negative sentence is the particle that accomplishes negation located? is the second question. What motivates the question? One could imagine a linguist who is trying to learn an exotic language asking it. He would, I suppose, have tried to obtain a corpus of utterances sufficiently rich to hold instances of all the elementary affirmative sentence patterns of that language (supposing this possible); next, he’d have consulted with a native informant as to how one would, in his language, “say the opposite(s)” of these. Assume the native informant is a speaker of English and the linguist’s native tongue is some non-Indo-European language, say Chinese or Hebrew. If I understand Brann correctly, she believes that the Chinese linguist would somehow find out that all the elementary affirmative sentence patterns of spoken English are reducible to the triadic pattern S is P. How could he have found this out? The best I can come up with is that, *in learning English, he relies on the same logical truth on which he relied when he acquired his mother tongue*—that whatever is said is interpretable as making some comment on a declared or otherwise manifest topic: The *topic* is *named* by one part of the sentence; the sentence *attaches* the comment to the *name*; and in so doing *comments on*, that is, predicates the sentence’s predicate of, the thing or *things in the world* that is or are the sentence’s topic.¹² The question now becomes how and why this insight into the logically dyadic T-C structure of simple¹³ affirmative sentences issues in the triadic S is P structure. The reason for my selecting a Chinese-speaking linguist was, of course, that (as Brann reports in the long and important footnote 22 on p. 64), Chinese sentences do not require a copula to accomplish the job of commenting. Hebrew doesn’t either: Joseph *holech* “merely juxtaposes” what is, strictly speaking, a participial (thus adjectival) form of the verb to the proper name

“Joseph” to say what in English would be said by the sentence *Joseph is walking*. But nothing stands in the way of a Hebrew-speaking linguist’s learning that in English sentences an “is” must be inserted between “Joseph” and “walking” for the predicating job to be accomplished.

What all this fussing is about is the issue how logical and grammatical distinctions differ and mesh. Brann’s fourfold answer to the question where the negation particle is located in a sentence proceeds, not on the linguist’s basis of studying a corpus of English negative sentences, nor on the logician’s basis of reflecting on the negating jobs that would have to be accomplishable if the tasks of describing and reasoning rightly are to be carried out. Rather, she works with the *S is P* pattern of “traditional” logic and negates, first the “is” or copula, next the “P” or predicate, third the sentence “S is P” as a whole, and finally, although not whole-heartedly, even the “S” or subject. Having done this, she points out the jobs done by the patterns which thus emerge.¹⁴

Why does she proceed in this manner? She is, usually, not at all friendly to mere algebraic patterning. More important, she knows that Frege, whose “deep critique of the classical view [of negation]” was taken up appreciatively in the concluding section of the treatment of question 1 (pp. 30-32), endorses something like what I tried to say through my fable of the Chinese or Hebrew-speaking linguist, that what chiefly matters is the irreducible logical contrast between naming and predicating and their complementarity,¹⁵ whereas the presence or absence of some form of the verb “to be” is a linguistic accident.

On first reading I thought that her manner of proceeding in Chapter Two is due to her not being as convinced as was Frege of the need for a principled distinction between logic, as a normative science, and psychology and linguistics as empirical sciences which acknowledge logical norms in practice (as we all do when we think), but which do not study them.¹⁶ Brann reports and up to a point explains that Frege distinguishes T-C structures qua what he calls Gedanken (“thoughts”) from “assertions” (what Kant called “judg-

ments”). And she appreciates that “thoughts,” including negations, are for Frege objective and atemporal whereas he regards “assertions” as acts of a speaker or thinker who at some time or other asserts an assertable or its contradictory. She even quotes a sentence of Frege’s which brings this contrast to bear on the issue of negation.¹⁷ But she refuses to let go of inquiry into what it is in human beings and the world that leads to nay-saying.¹⁸

On second reading I found an outright answer to my question, why Brann distances herself not only from Frege but also from Plato and the Aristotle of *On Interpretation*, in footnote 22 (p. 64). She writes: “I accept...[‘S is P’] as the fundamental sentence form because people whose thought is congenial to me¹⁹ have built on it structures that are of great interest, and because I have corroborated by introspection that it is my most basic declarative mode of internal speech, closer to thinking than the bipartite sentence consisting of a subject and a predicative verb.”²⁰

Postponing till her penultimate chapter, Chapter Six, inquiry into what she calls the “greatest question,” namely, whether Something or Nothing is ultimate, the issue in section 3 of the present chapter is whether “in human speaking denial is always derivative and in human speech negation is always secondary” (p. 36). Boethius, ancient authors in the Aristotelian tradition, and modern cognitive science are reported to endorse the opinion that the affirmative is prior to the negative, as at first blush it would seem to be, since any negating particle is an “addendum.” Bosanquet and Bradley are described as having answered the question in a more nuanced way: “Negation is not as such a denial of affirmative judgment; it does not presuppose a particular affirmative judgment to be denied. But it does presuppose some general affirmation, namely, that of a world having a positive content judged to be real....The positive judgment itself cannot take place before the distinction between a mere idea and a fact of reality is recognized. ‘And with this distinction the idea of negation is given’ ” (p. 40).²¹ Still, the over-all conclusion of the inquiry in section 3 is that negation is “secondary.”

More minute examination of Bosanquet's and Bradley's remarks on negation might have yielded a scheme for differentiating the diverse senses of the prior/posterior relation; causal priority might have become differentiated from conceptual priority; priority in dignity or rank from temporal priority.²² But as it stands, section 3 seems to favor a temporal sense of prior/posterior. This bothers me because I am inclined to believe that logicians qua logicians have no business asking about temporal priority and that conceptually the positive comes or rather is on the scene along with the negative. Thus neither is prior to either.²³ As an illustration, consider the following: At the beginning of the *Prior Analytics*, Aristotle defines argument or deduction (syllogismos) as follows: "A deduction is a discourse in which, certain things being stated, something other than what is stated follows of necessity from their being so." I believe that anyone who grasps the type of necessity here spoken of grasps along with it the impossibility of the contradictory. Upon reflection I recognize that I base this apparently psychological observation on the conceptual (i.e. logical) truth that must-bes are the contradictories of cannot bes and cannot be apart from them. Indeed, it dawns on me that my seemingly psychological claim may be nothing but the conceptual truth itself in another form of words.

The treatment of question 4 (how negation is related to falsity) shows a respect for Wittgenstein that was, I believe, absent from Brann's previous writings.²⁴ His *Tractatus* is praised both for asking and for answering the following questions: (1) "How do Truth and Falsity come to be opposites" (i.e. opposites)? (2) "How is negation related to them and to truth-values?" (3) "Why are propositions bipolar?" (4) Can we justify the logic textbooks' assumption "that each proposition has only one negative?" (p. 47).²⁵ The two paragraphs immediately preceding the enunciation of these questions seem to report the answers that Brann found in Wittgenstein. I quote them in full:

"It all begins with a discrimination exercised by us over a logical space wherein things are seated within their place in their proper relation configurations, a discrimination of the otherness of what

is false. So prototruth²⁶ is in the world of fact. Now comes a proposition. In its negative and positive sense it is like a solid body that restricts all movement into a certain place; in its positive sense it has an empty place where the object can fit in (*Tractatus* 4.463). These [comparisons] are pictures of the ...inherent bipolarity of every proposition. It shows negation from the beginning related to the negated proposition, for it is that hole which the negating proposition is blocking (*Tractatus* 4.0641). So to understand a proposition is to see the logical space (*Tractatus* 3.4) and to discriminate what the facts would have to be like to make a proposition...[i.e. a logical picture] true or false."

"Truth, then, or falsity, is the consonance or correlation of a propositional picture with reality (*Tractatus* 2.21), where reality (*Wirklichkeit*) is the existence or non-existence of facts (*Tractatus* 2; 2.06)—a non-existent fact being one that is pushed out of the world picture by the fact that exists. In this correspondence is truth in the primary sense, and it comes in the duality true-false because of the way logical space divides and we discriminate the facts. In the sense of propositions lies the polarity positive-negative, the latter of which is expressed in the sign not- when the facts fail to correspond to p. Truth values, T and F, are secondary to and derived from negation: 'The sense of a truth function of p is a function of the sense of p' (*Tractatus* 5.2341). Thus T and F are not properties of propositions (*Tractatus* 6.111) any more than are positive and negative. The truth values of the truth tables capture the relations of T and F to p and not-p more than they define the latter."

Section 4 concludes with the following remarkable observations:

(1) The examination of the *Tractatus* has revealed that for Wittgenstein and other moderns "truth comes from the world, and negation is in propositions. For traditional philosophers it is just the other way around: Negation is in the world of appearances and in the beings of the intellect, and truth is in the propositions" (p. 48).

(2) What Aristotle says about the true and the false in *Metaphysics* Bk. IV, 1011b25 and Bk VI, 1027b19ff tends to show

that Heidegger was quite right when, in his *Logic*, he denied that the Aristotelian texts hold a “correspondence theory of truth” (p. 48).

(3) Aristotle speaks “for a world very different from the one in which the propositional calculus of Russell and Wittgenstein is at home. For Aristotle negation (I mean negation in an objective form, contrariety interpreted as Nonbeing and its effects) is in the world and falsity (I mean the not always unintentional failure of speech to reveal being is in statements.... Whether negation is in the world or in speech is one of the numerous but interrelated marks by which a classical world... is distinguished from a modern world. For a world that has negation built in responds to receptive thought since it reveals its own distinctions, while a solidly positive one demands constructive reason since oppositions need to be made” (p. 49).

As the just-reported grand conclusions of section 4 of Chapter 2 tend to confirm, negation became thematic for Brann by virtue of her interest in the psychological and ontological topics that were mentioned in the opening paragraph of this review; whereas logicians—from Aristotle through the Stoic logicians and Frege, Peirce, Russell, Quine—attend to negation chiefly because of how it affects what is and what is not a valid pattern of argument. Patterns of reasoning or deduction rather than patterns of judgment or of propositions may well be their primary concern.²⁷ This difference between herself and the logicians might also explain the otherwise rather puzzling remark, on p. 25, that “by and large the negations of logic²⁸ take place in symbols and are found in books. They are not so much naysayings as naywritings.” For the purposes of reasoning the idea of contradiction, that is, of an opposition which is not only exclusive but also exhaustive, is indispensable: Illiterate Athenians have no trouble grasping the sense of arguments by contraposition such as, “If virtue were teachable, there’d be teachers of virtue, yet there are none. Therefore, virtue is not teachable.” And I surmise that the pattern of Euclid’s *reductio*s (which likewise involve the stark negativity of contradiction) was first discovered as a debating gambit and passed on by teachers of rhetoric. I say this

partly because it seems to me that even Euclid’s *Elements* still retain a *viva voce* dialogic rhetorical mode.

“When we refer to a nonexistent object, what are we thinking of and what are we talking about?” (p. 76). Chapter Three begins by pointing out that this is a distinctively modern question,²⁹ different from the ancient one taken up in Plato’s *Sophist*, how non-being can be, to which Chapter Four will be devoted. Four types of non-existents are mentioned for purposes of illustration—“members of extinct species [dodos, for instance]...deceased human beings [for example, Socrates]...artifacts no longer extant,³⁰ but also all the entities that never did exist in the ordinary sensible sense, such as unicorns” (p. 79).

Roughly speaking, four types of answers are sketched in Chapter Three: Bertrand Russell’s “theory of definite description,” Alexius Meinong’s “theory of objects [and objectives],” the recent version of Meinong worked out by Terence Parsons in his 1980 book *Nonexistent Objects* (New Haven: Yale University Press), and any one of a number of theories according to which “pretense and make-believe are the chief explanatory principles,...[not of the behavior of nonexistent objects], but [of] how they manage to come on the scene to begin with, [and] what we cognitively do to cooperate in fiction making” (p. 99). From the way these theories are elaborated it becomes apparent that, although—as the two earlier volumes of Brann’s trilogy argued—our ability to think and speak truly or falsely of bygone things is testimony to the powers of the human imagination, in that the feat of “re-calling” depends on or consists in the imagination’s having succeeded at making temporally absent things present, it is the “saving” of fictional entities that chiefly matters for the purposes of the present book’s Chapter Three.

Before she turns to a fairly detailed examination of Russell’s treatment of proper names and definite descriptions, Brann lets us know that “the theory that is the winner in the world of logic [namely, Russell’s], will turn out to be something of loser in the world of fiction” (p. 76). Russell’s theory, as she tells us Parson too

observed, pays too high a price for its clarity: "The theory commits us to treating the sentences of fiction as false, while most of us think they have at least a sort of truth, and some of us even believe that they often have more truth than mere fact does" (p. 86). Meinong, contrarywise, "comes near to saving the phenomena of that intentional experience of central interest to this trilogy...the experience of imagining (p. 91). Russell's excision of nonexistents from reality³¹ is false to the power that some non-existent beings and places have, moving us "as models and attractors," and "outliving us by millennia, and in a word impinging on us as if existence were home to them as well [as to ourselves?]" (p. 102).

Instead of recapitulating what Brann says about the technical aspects of Russell's theory of description and Meinongian rival theories, I want to dwell a little on Brann's question how we are to account for the fact that the Natasha, Pierre, and Andrey of Tolstoy's *War and Peace* or the Hari Kumar and Ronald Merrick of Scott's *Raj Quintet*³² have become our companions.

A familiar answer begins by reminding us of our unabating curiosity about our fellow human beings, whether met in the flesh or encountered vicariously through what our friends, our children, our journalists report and our television news programs show. "But the characters who people novels are immensely more memorable than the Tom or Dick or Harry that our neighbors tell us about." Well, that does somewhat depend on what a particular neighbor is capable of telling us about a particular Tom (or Jane for that matter), not to mention the particular Tom or Jane spoken about. But to the extent that it is true, may it not in large part be the result of novelistic characters' (at least those that dwell in novels of substance) becoming so much better known to us than any persons not our "real life" intimates?³³ Novelists are much better at noticing things than most of us are, and better at imparting what they've noticed too. Also, our acquaintance with novelistic characters is a shared acquaintance, shared with other make-believe characters in the novel, with the novel's author, and with fellow-readers of the novel. It is hardly news that sharing (comparing notes and impres-

sions) is immensely pleasurable, greatly contributes to a feeling of solidarity, and is constitutive of our sense of reality.

Add to what's been said our relish for just about all human skills or powers, our own as readers and the novel-making skills of the author. Most important, count in the special joys of play and make-believe: Aren't we well launched on the beginnings of some sort of answer to the question "Why and how do fictional characters become real to us?"

Brann does not think so. At least, she rejects the idea that what we relish, in ourselves and novelists, is the exercise of the human power of make-believe: "Being absorbed into a fiction, living in its landscapes and with its people, is not well described as a form of pretense—not on the reader's or viewer's part and so much less on the poet's or painter's part....Children, to be sure, play 'Let's pretend,' but that is usually when the game requires that roles be assigned, and I'd bet that the mover of the pretense doesn't often assign, say, the submissive role to herself; in participating in a novel, on the other hand, we may well surrender ourselves to the experiences of the underdog" (p. 99f).³⁴

I wonder whether childish "dramatic play" (as the child psychologists call it) and make-believe of every sort is here conceived of in all its richness. Think of the infinite variety of solitary and collaborative pretending and letting be we catch our children at! Sure, sometimes there is one kid in charge ("I'll be mommy and you'll be baby") but by no means always. Two games of make-believe I remember watching were: spreading out newspapers on the floor to be islands and going island-finding, island-hopping, and island-working; arranging marbles in rows and letting them be children at school. Neither of these games called for leadership. Older children would sometimes join the younger ones at play, humbly grateful and gratified to be allowed "in" on the game. Improvisational theatre has some of these qualities, I believe, though I cannot be sure since I have never participated, either as actor or as audience.³⁵ I went on like this because I want to make concrete that there might be ways of "taking fiction seriously" and trying to understand why and how

make-believe matters that don't proceed by way of ontology but by way of psychology. The British pediatrician and child psychologist D.W. Winnicott may have something to teach us here.³⁶ And as for grown-ups making believe, I have begun to read Kendall L. Walton's *Mimesis as Make-Believe, On the Foundations of the Representational Arts* (Cambridge: Harvard University Press, 1990). Part Four of this book tries to show why it is all right to do without fictional entities. I should, however, also mention that in Austria, at the University of Graz, much is currently being written about the logic and ontology of fictional objects.

A reader of an earlier version of this review advised me that I need to report where I stand on the issue of the being and non-being of fictional characters. I am undecided, because I have insufficiently considered (to give just one example) whether my belief that one can be as mistaken in one's "reading" of a fictional character as one can in one's "reading" of a violin sonata does or does not have ontological implications. My laziness about ontology may have something to do with the fact that I lean toward believing that it is more illuminating to ask questions about how imagined persons and places are and are not like historical individuals and geographic regions, or how what one learns about good and evil from living hooks on to what one learns about them from literature, than it is to delve into ontology.

The rest of Chapter Three is devoted to reflections on lies and lying³⁷ and to Anselm's so-called ontological proof of the impossibility of God's non-existence.³⁸ The setting out of Anselm's argument is very pretty!

Chapter Four: When we begin to read Chapter Four's first paragraph, we are already in possession of the guidepost furnished in the Preface (p. xiv): "Here [in section 2] comes on the scene the Non of philosophy (my italics), a prefix signifying not the brusquely rejecting denial of fact in words but the more forgiving opposition of two elements in the same world. The thought of Nonbeing comes among us as the unbidden effect of Parmenides' injunction against it, and Plato will domesticate that same Nonbeing, bringing

it into philosophy as the relational principle of diversity, the Other." But to reach section 2 we must traverse section 1. It begins: "Parmenides learned from the goddess who dwells in the house of truth that 'Being is' and that he must not embark on the way of Nonbeing. As far as I know, Nonbeing had not established itself in anyone's thought—at least in the West—before Parmenides' deity warned him off this path of inquiry; nor has it ever vacated its place in thought since. Her [i.e. the goddess's] repeated prohibitions and injunctions against this Unthinkable and Unsayable seem to have done for this philosophical offense what inveighings against sin have so often accomplished in the moral sphere—they have launched it on its career as a well-formulated and ever attractive presence" (p. 123).

Among the titillating suggestions of Brann's commentary on Parmenides' poem there is this, that this "heroic epic" (in dactylic hexameter) is "unmistakably [intended as?] a rival to Homer's *Odyssey*," so that "the ancient difference between philosophy and poetry" of which the Republic speaks (607b)³⁹ first comes on the world scene when the journeying of young Parmenides displaces that of middle-aged Odysseus.

I find myself incapable of paraphrasing what Brann says about Parmenides. Here are some more quotations: "We often use phrases like 'sing a song,' where the object is the action of the verb made into a thing accomplished. Parmenides sometimes does something symmetrical with the verb 'to be' at the front end of a sentence. He turns the verbal sense into a subject. But I don't think that Being or its negation is thereby established as a thing.... On the contrary, mere verbal 'Is' remains the truest kind of showing forth, and the nounlike forms merely display the inability, or rather unwillingness, of the goddess's speech to get outside the meaning of that little word which courses through human speech surrounded by subject and predicate. Parmenides' poem is a rebuff before the fact to those who will claim that Indo-European languages are indefeasibly subject-and-predicate-ridden. For this is what Parmenides is bidden [by his goddess] to convey: the sheer Isness of which we always get hold

when we think beyond multiplicity...The common declarative tripartite sentence...is an implicit expression of three distinctions: between the thinker and the thought (since some thinking person is having and uttering a thought); between the thought and what it is about (since the sentence states a thought-proposition about an object); and between the object and its properties (since the sentence predicates a property of its subject). At the very beginning, before these elements have ever been formally established, the goddess wants to prevent them from being distinguished....My main purpose in this section has been to enter just enough into the meaning of 'Is' to make sense of the 'Is not' that trails it as its unwelcome but unshakable doppelganger" (p. 130ff.).

"The next step in the ancient story of Nonbeing is...the reversal of its outlaw status and its integration into the community of Beings. It is taken in Athens, the city of reconciliations" (p. 138).

What follows the exquisite paragraph whose two opening sentences were just quoted⁴⁰ is a fresh setting out of reflections on Plato's dialogue the Sophist.⁴¹

I describe a few of these.

Seasoned readers of Platonic dialogues agree in noticing that the conversation in the Sophist begins with the question whether corresponding to the three names or titles "sophist", "statesman", "philosopher" there are three beings or three types of being. Given the fact that there is a dialogue called Sophist and also one called Statesman, the non-being of a dialogue called Philosopher is a glaring fact. Some Plato commentators have argued that the Philebus is the "missing" dialogue. But Brann believes that there are indications in the Sophist that Plato means us to understand that "sophists and philosophers are identical," though differing in three respects: First, the dialectical skill which is shared by sophists and philosophers is, in the philosopher, accompanied by a kind of professional ethics. Dialectic is, for him, a sacred trust. For the sophist it is a money-making *techné*, for sale to the highest bidder. Second, unlike the traveling sophist, who is detached from civic loyalties, "the philosopher never forgets his human circumstances" (p. 139). Third, the

philosopher is "that rare sophist who acknowledges Nonbeing without taking cover in it" (p. 139).

To catch the "vulgar" sophist, the philosopher-sophist—in this dialogue represented by an unnamed stranger-guest from Parmenides' city, Elea—must somehow show that contrary to what Parmenides' goddess taught him, Nonbeing is.

But it is not only to catch the sophist; nor just to defend the possibility of false speech, negative speech, and error. Rather, to save philosophy itself (to save speech itself?), Nonbeing must be allowed to be! (*Sophist* 260A). The stranger therefore, Theseus-like, or again, Athena-like, bestows citizenship on Nonbeing by declaring it a form among the *koinonia* of forms (p.141). It is the diversifying relational principle or form Otherness, not to medamooos on, absolute nothing. "It is its ...[being identified] as the Other that saves it from the utter inability—which Parmenides does indeed assert—to become sayable....Nonbeing both bonds and negates among beings, but its negation is not annihilation" (p. 142).

The chapter's last paragraph makes the transition to Hegel: "In Nonbeing naysaying has found its enabling principle in the realm of Being. Now comes a view of speech and thought [namely, Hegel's] as themselves having inherent negativity. As Nonbeing was a source of ontic diversity, so this [Hegelian] negativity will be the source of *mental motion*" (p. 144, my italics).

Concerning Chapter Five I merely report that it employs the trinity Spirit, Understanding, Reason to display and classify the kinds of negativity encountered in Hegel's *Phenomenology*, Kant's First *Critique*, and Hegel's *Logic*. Devotees of Hegel will find much to admire here. The chapter concludes with a paragraph announcing that, though the earlier chapter concerning Parmenides and Plato and the present one concerning Hegel conspire to reaffirm that Being is prior to Nothing, this is not as yet fully established: Therefore Chapter Six⁴² jousts with the "greatest question"—which is ultimate, Something or Nothing?

Most winning, witty, and sometimes even wise of all the sections of *Ways of Naysaying* are the concluding pages of this chap-

ter, Chapter Six, about Nothing, offered under the seemingly bleak heading, "Nothing as Inescapable End: Death" (pp. 188-198)!

However much of the time I was rather lost in this chapter. The reason, I imagine, is that Brann's question, whether Something or Nothing is ultimate, never jelled into being a question for me. Yet as best I understand the chapter, the various items it gathers together—"modern nominalism" (p. 170), Epicureanism and the void (p. 171ff), the "blithe nihilism" of some of the Buddhist schools (p. 173), the political "nihilism" of the mid-nineteenth century Russian revolutionaries portrayed in Turgeniev's novel *Fathers and Sons* (p. 179), and Heidegger's teachings concerning the nihilating nihil (*das nichtende Nichts*, p. 184ff) —are thought to deserve to stand side by side because they all affirm, albeit in different ways, that Nothing is more C primordial, more really real, than Something. This is the sense in which they are all of them "nihilisms."⁴³ Another thing that they may have in common is an ontology in which will is prior to understanding.

It is possible that my failure to understand the chapter and its leading question is due to incomprehension of Heidegger: I tend to become so overwhelmed with irritation at his preachy incantational tone, his haughtiness, his tricks of inverting grounds and their consequents, his abuse of the scholarly riches deposited in etymological dictionaries, that I become incapable of paying attention to what he says.

Conclusion: (1)Is all human "opposing" (in will, word, or deed) reactive to, thus parasitic on, a "posing"? (2)Might negating responses constitute evidence for the being of Nonbeing, Nonexistents, or even of Nothing? (3)Supposing there are Nonexistents and Nonbeings, by what powers of the soul do we encounter them?

In her final chapter, Brann recapitulates the affirmative answers she earlier gave to questions (1) and (2). But she now expands on what was said about Nonbeing in her pivotal Chapter Four: "Besides the nonexistents that respond to our sense of what is missing...there are also declines and falls from existence, right in the

world around us, that we experience as a sort of nonexistence. Take, for example, the reflection of a willow tree that appears in a pond. Take the numerous things and people in the world without that are not what they appear to be....This last group, *fallen* existences [my italics], particularly raises the question whether it is our way of experience or the nature of things that provides the not or non here" (p. 215). As the past participle "fallen" which I underlined just now goes to show, Brann is introducing a principle of hierarchy into the realm of being. "Nonbeing as otherness is the universal relativity....But there is also ...a vertical Nonbeing....This Nonbeing...has in it something of absolute inferiority, of defective or deficient Being" (p. 216). Brann has brought us back to the central books of Plato's Republic, I mean, books VI and VII, with their image of the sun, diagram of the unequally divided line, and story of the prisoners confined to life in a cave.⁴⁴ It is in this context that she reaffirms the answer to question (3) that's been with us since her book's opening sentence: It's neither sensing nor thinking that give us access to nonbeings and nonexistents but imagination and memory.⁴⁵

Obviously, then, this review cannot have done justice to the book it tried to summarize and (in some measure) appraise, since that book is one third of a three thirds whole. I hope, however, to have conveyed something of its extraordinary scope, writing style, intellectual daring and imagination.

NOTES:

1. *The Ways of Naysaying: No, Not, Nothing, and Nonbeing* (New York: Rowman & Littlefield, 2001)

2. Cf. *What, Then, Is Time?*, p. 165: "...we are able to have and interpret images, to live consciously in the phases of time, and to think and speak negatively. My guess is that these three capacities are really triune, three-in-one. They may be the root of our humanity, and perhaps the subject of another book."

3. See also *World of the Imagination*, pp. 405 and 783, where Brann expresses her agreement with Freud and Wittgenstein that one can “speak of what is not, but not depict it.”

4. His self-identification, from Faust pt. 1, lines 1336-8, is quoted on p. 14: “I am a part of the force that constantly wills evil and constantly effects good....I am the spirit that constantly denies.” Omitted from the quotation, though surely Nietzscheans would hold that they are, if not the, an *arche* of “nihilism,” are the lines: “*und das mit Recht; denn alles, was entsteht/ Ist wert das es zugrunde geht;/ Drum besser ware es dass nichts entstunde...*” (“and rightly so, because everything that originates deserves to perish. Wherefore it would have been better if nothing had originated.”)

5. Brann’s use of the Freud essay is filtered through Rene Spitz’s *The First Year of Life* and *No and Yes*. I have not read these books. Therefore I cannot tell whether her complaint that Freud’s speculations— about what it was that first prompted the human race’s invention of a “symbol” for negation— fail to include reflection on not as accomplishing “denial of truth or untruth” is also Spitz’s. “Psychoanalytic theory does not tell whence comes mature negation and possible truth telling; these may not have a naturalistic genesis” is the concluding sentence of her account of Freud. What a non-naturalistic account of origins might consist in is not explained.

6. *The Second Year: The Emergence of Selfawareness* (Cambridge: Harvard University Press, 1981).

7. This list slights her treatment of double negation, of the logical paradoxes that are generated when negation and self-reference are allowed to combine, of the stretching of the concept of number through the introduction of negative numbers and zero, and of Kant’s discovery or invention of “directed quantities” (vectors) in the pre-critical essay “An Attempt to Introduce the Concept of Negative Numbers into Philosophy.” Since these topics are listed in the well-prepared index, I omit page references.

8. Cf. *Metaphysics* ix, 1048b1-10

9. The quoted sentence ends with the bracketed remark “...of which the first, the opposition of oppositions, is surely that of thinking itself to its object.” This claim makes me uneasy, given the remark, on p. xiii of the Preface, that “the mysteries and conuncrums of intention—denotation and reference,

sense and meaning...are happily not within the task of this book.” In my estimation, Frege’s insistence on the need for a Sinn/Bedeutung contrast and late Russell’s attempt to dispense with it must be discussed by anyone who investigates thinking and speaking and their “objects.” Observe also that conversational exchange is given no role in the account. A quick way of making this manifest is that, throughout the book, saying “no” is classified or explained in terms of exercising the will, although it surely figures when answering what linguists indeed peg as “yes/no questions.”

10. My hunch is that Anscombe’s remarks about “internal” and “external” negation in her Introduction to Wittgenstein’s *Tractatus* (see in Anscombe pp. 31, 34, 35, 46, 47, 51), and her question (p. 53) “...Is the property of being true or false, which belongs to the truth-functions, the very same property as the property of being true or false that belongs to the propositions whose internal structure does not interest us?” is what first prompted Brann to make the question about the “location” of the negation particle thematic.

11. If we are both looking at the ocean and you say “Majestic!” my guess that it is the ocean that is said to be majestic is pretty safe. That’s how I mean “otherwise manifest.”

12. For the somewhat ampler statement of this Fregean type of analysis of “simple” sentences which is the source of my remarks, see pp.132f, Anscombe and Geach, *Three Philosophers: Aristotle, Aquinas, Frege*. Please observe that although English, which has pretty nearly dropped the use of case endings, tends to place the name of the topic early in the sentence, classical Greek and other languages that use case endings to express syntactic structure may, for rhetorical purposes, place it late in the sentence. Note also that nothing prevents a simple sentence’s having a “complex” topic, for instance the ordered triple {Athena, Athens, this olive tree}, which is, on one analysis, the topic of the sentence “Athena gave Athens this olive tree.” When the topic is so identified, the predicate is “—gave—to—” When the item that would, in Greek, be in the nominative case is singled out as the name of the sentence’s topic, the predicate would be “—gave Athens this olive tree.” What chiefly matters, from a Fregean logical point of view, is the contrast between proper names (e.g. “Theaetetus”) and concept words (e.g. “flies” or “sits”) as in the sentences “Theaetetus flies” and “Theaetetus sits.” A person who is unaware that the word “give” is trivalent and the word “fly” or “sit” is monovalent hasn’t got the hang of the semantics of these concept words.

Cf footnote 11 below. See further Anthony Kenny's Penguin volume about Wittgenstein, pp. 121f.

13. How "simple" is to be understood in this context is, of course, much in need of saying.

14. In the spirit of Kantian "architectonic," these ways of negating a sentence are later (p. 95) brought to bear on lying, so as to yield a classificatory scheme for lies.

15. In the "dream theory" of *Theaetetus* 202 the mistake is to suppose that sentences consist of nothing but names; earlier, at 190, it looks as though sentences are being spoken of as consisting of nothing but predicate words. For explicit correction of such "homogenizing" treatment of the constituents of sentences, see *Sophist* 262.

16. Does "doing logic"/"doing empirical science" exhaust the genus "investigation"? Brann would certainly question this bipartition.

17. "Perhaps the act of negating, which maintains a questionable existence as the polar opposite of [affirmative] judging, is a chimerical construction, formed by a fusing of the act of judging with the negation." (p. 128 of Geach and Black's *Translations from the Philosophical Writings of Gottlob Frege*, Oxford: Blackwell, 1952).

18. In footnote 54, on p. 69, Brann calls on Anscombe to testify that, as Brann puts it, the Wittgenstein of the *Tractatus*, in "rejecting inquiry into the way world, pictured fact, language, and thought are related" and "pretending that epistemology has nothing to do with the foundations of logic and the theory of meaning," made claims that are "fantastically untrue" (Anscombe, Introduction to Wittgenstein's *Tractatus*, (London: Hutchinson University Library, p. 28).

19. For example, and especially, Kant and Hegel.

20. This sentence continues, after a colon, as follows:"The briefest way to put the reason why is that thinking speech brings its objects to a standstill even as it goes about discerning them through their properties. The declarative is expresses at once that transfixing done by thought and the expansion with which the object of thought responds." The just cited explication of Brann's "introspective" report is tantamount to an affirmative answer to the

question (p. 63) "Is Being at the true center of every sentence even if it is obscured by a predicative verb?"

21. I note that there's a large dose of such "idealist" thinking in Freud's essay on negation: "the performance of the function of judgement is not made possible until the creation of the symbol of negation has endowed thinking with a first measure of freedom from the consequences of repression and, with it, from the compulsion of the pleasure principle."

22. Cf. Aristotle, *Metaphysics* Bk V, Ch.II.

23. Peter Geach's essay "The Law of Exclude Middle" (p. 79, *Logic Matters*, Oxford: Blackwell, 1972) contains a nice exposition of this thesis. Geach, like Brann herself (e.g., p. 28), exploits Wittgenstein's metaphor of "logical space" and the notion of boundary for this purpose. Note, by the way, that it would be a mistake to assimilate Wittgenstein's logical space to Brann's psychic space, as she describes it on the opening pages of her Preface. Studying Brann's, Wittgenstein's, and the cognitive scientist Gilles Fauconnier's uses of metaphors of space would be a delicate but worthwhile undertaking.

24. See, e.g., *What, Then Is Time?*, p. 112ff. In other sections of *Ways of Naysaying Wittgenstein* continues to be treated as the or a bad guy: He would, as Brann reads him, want to prevent her and fellow philosophers from investigating whether there is "some one truth behind [the] many appearances" of, in this instance, negativity (p. xiv and note 11 on p. xvii). In the chapter on nihilism, Brann approvingly reports that Stanley Rosen has "shown" that "Wittgenstein and his progeny are nihilists because they cannot distinguish speech from silence." After the brief quote from Rosen, she goes on to say: "For [according to Wittgenstein] it makes no difference what we say. It makes no difference because if, as the later Wittgenstein says...speech becomes meaningful only in a context of gamelike rules and conventions and as a 'form of life,' then we can never get beyond these and never receive a sensible answer when we query a conventional usage or conventionalism itself" (p. 183).

25. I was helped by Anscombe's version of this last question, which runs as follows: What right do logicians have to define "not" by telling us that "not p" is "the proposition that is true when p is false and false when p is true"? The phrase "the so- and- so" is, after all, legitimate only when there is a so-and-so and there is only one such.

26. Does this word (or its German equivalent), occur in Wittgenstein's text?

27. It is a striking fact that only Aristotle's treatment of "immediate inference" is taken up (footnote 7, p. 61) and "syllogizing" omitted. Note also that in Chapter Three, when dealing with Russell's account of Definite Description, nothing is said about the need, in mathematical reasoning, for the principle of "substitutivity of identicals" or the "principle of existential generalization." See Ausonio Marras' Introduction to his anthology, *Intentionality, Mind, and Language* (Urbana: University of Illinois Press, 1972) for some brief remarks about the latter two. When all is said and done, Brann does not seem to be really interested in formal logic. This is how I account for her not catching the slip in claiming that "In symbolic logic we do not enter the propositions as we did in section 2, but take them as primitive, symbolized by p or q, etc." (p. 43; cf p. 212). She certainly knows that Frege's treatment of quantification (analysis of the sense and use of such little words as "all", "some", "one," which is needed for doing predicate calculus) is what is usually singled out as the true "advance" beyond premodern logic; Stoic logic, though "pre-modern," had already dealt with the definitions of the logical constants of propositional logic and with its basic argument patterns.

I look as though I'm being a pedant about the history of logic. But that's really not what I care about. Rather, ever since the days that I heard the World War II German soldiers who were entering Amsterdam, Holland, sing "*Denn wir alle lieben nur ein Madelein, Annemarie*" I have wondered, "Should I feel sorry for that girl, Annemarie, burdened with being loved by this whole troop of men? Or are there as many Annemarie's as there are men in this troop, and each of the girls gets one of the singing men? For a fine essay on this topic, see Peter Geach's "History of a Fallacy" in *Logic Matters* (Oxford: Blackwell, 1972).

28. I believe this means the not of contradiction.

29. I am not sure how "modern" is meant here: post-Occamist, that is post-realist (in the scholastic sense of that word)? I ask for clarification of the adjective because I am not certain what, exactly, the systemic import of the observation is. See footnote 23 on pp. 111ff. See also the remark about the "inherent nihilism of an absolute nominalism" in her commentary on Wallace Stevens' poem "The Snow Man" and the continuation of this thought in her interpretation of "The Course of a Particular," p. 170. Footnote A 3 on p. 199

claims that "nominalism is one of the philosophical positions adopted by those for whom disillusionment is a warrant of truth" and concludes with a remark about the "fanatically honest." These are, says Brann, the folk who "take pride in shivering in the metaphysical cold." The quoted passages sound—what shall I call it?—dismissive to me. I wish there had been something more nearly like an explanation of what the nominalism/realism issue is and why Brann favors the realists. Cf pp. 4-6 of W.T. Stace, *The Philosophy of Hegel* (New York: Dover, 1955)?

30. Artifacts no longer in use, like sliderules, or tools for living about which we learn through literary remains but exemplars of which have not been encountered by archaeologists? I try more nearly to specify the question because I am confused whether the general question of how we can speak or think truly or falsely of kinds that are "by-gones" is being raised or rather the question how bygone individuals can be referred to? Cf Wittgenstein's Philosophical Investigations ¶179 about the many senses of "Moses did not exist." See also G.E.M. Anscombe and P.T. Geach, *Three Philosophers* (Oxford: Blackwell, 1973) pp. 135f about the importance of Frege's reviving the scholastic contrast between singular and universal propositions. "Traditional" logic rides roughshod over the distinction. Geach's essay "Perils of Pauline" in *Logic Matters* is refreshingly lucid and unstuffy on the subject of names and descriptions (and much else besides).

31. Cf. p. 100: "What Russell says he means, flatly and irremediably, and therefore he must be flatly and irremediably wrong: It cannot be the case that what is said about and within fictions is false—unless one maintains that logically accurate speech has no correspondence with humanly normal speech. For we say both that it is true and that it is true to life that Natasha Rostov marries Pierre Bezuhov, and we want to keep on saying just that."

32. See the splendid appreciation of the Raj Quintet in Brann's contribution to the anthology *Poets, Princes, and Private Citizens* edited by Joseph M. Knippenberg and Peter Augustine Lawler (Lanham: Rowman and Littlefield, 1996).

33. The special pleasure we take in our own children is not solely due to their being ours; it has much to do with our knowing them better than most other people's children.

34. I worry a little about the rhetorical effects of using the words "pretend" and "pretense" in lieu of "make believe." But let that pass.

35. The novelist Jorge Luis Borges writes somewhere, “[The actor] on stage plays at being another before a gathering of people who play at taking him for that other person.” I acknowledge, however, that novels differ from stage plays, involve (in addition to the things mentioned) some special a *deux* intimacy between the reader and the book.

36. See for example *Playing and Reality*, London: Tavistock Publications, 1971 and perhaps also some of the essays about Winnicott included in the collection edited by Grolnick and Barkin, *Between Reality and Fantasy* (New York: Jason Arons, 1978). I particularly recommend Rosemary Dinnage’s “A Bit of Light.”

37. As best I recall, Brann does not, when treating of “the lie in the soul” (p. 94), worry about what Freud called repression.

38. I was puzzled that Brann did not reserve space in her book to discuss the important topic of children’s and grown-ups’ often being uncertain whether this or that “really happened” and whether this or that named individual (Satan, Cerberus) or species of entities (witches) “really exists” or not. Helping children sort out the dreamt from what’s in the public world of the awake is among our parental responsibilities. Thus “...does not exist” seems to me to hold as important a story as is that about the being of non-beings.

39. Cf Epinomis 990 on that mere farmer’s almanac, Hesiod’s *Works and Days*?. Parmenides reputedly was the first to propose that the moon shines by the sun’s reflected light and that the earth is a sphere; also, that the evening and morning stars are one and the same. I therefore keep hoping for a reading of his poem that will show that its *episteme/doxa* contrast has astronomical meaning. But no such reading is endorsed by Brann.

40. These sentences allude, of course, to Aeschylus’ *Oresteia* and Sophocles’ *Oedipus at Colonus*. This well illustrates the dramatizing vividness of Brann’s ontological discourse.

41. Cf *The World of the Imagination* p. 389ff. and Jacob Klein, *Greek Mathematical Thought and the Origin of Algebra* (English version, Cambridge: MIT Press, 1966), p. 82 and A Commentary on Plato’s *Meno* (Chapel Hill: University of North Carolina Press, 1965), p. 114f.

42. Corresponding to the afternoon of the day on which Man was created, male and female, in God’s image? Yes, of course I am joking in playing with the numbers. But I am not just joking: The chapters in Genesis that tell in

detail how man became man (chapters 2, 3, 4) hold a plethora of negation words, whereas the opening chapter lacks all negativity.

43. If there is an explicitly stated definition of the word “nihilism” in Chapter Six, I need to have it pointed out to me.

44. Cf. Eva Brann, “The Music of the Republic,” *St. John’s Review*, volume xxxix, numbers 1 and 2. See especially pp. 75,6.

45. Cf. the discussion of “opinion” on pp. 38ff of “The Music of the Republic.”

 The Potent Nonentity: A
review of Eva Brann's *What,
Then, is Time?*
Torrance Kirby

Time, Augustine claims, is so ordinary as to be impossibly difficult (*Conf.* XI.14). This is the paradoxical theme to which Eva Brann returns often (one is tempted to say “time and again”) in her remarkable, recently published volume *What, Then, is Time?* Time, the “potent nonentity,” proves to be as elusive a quarry as the Sophist himself. The inquiry begins with a high sense of wonder peculiarly fitting in this of all philosophical quests. The inner experience of time and its foundation or ultimate ground, constitute the heart of this investigation. Brann employs an extended, highly elaborated aporetic approach to the search for a definition. So numerous and complex are the ποταμοὶ encountered that this Protean beast is not pinned down with a definition until well into the closing chapter of the book. The investigation as a whole is composed in the form of a diptych with one larger panel devoted to the study of various selected texts or “presentations” by philosophers who, in Brann’s estimation, “have written most deeply and most engagingly about time.” A second smaller panel contains the author’s own “reflections” on the matter. She is careful to point out, “study and thought, though not of necessity incompatible, are by no means the same” (159). This book is worthy of the most careful reading with both ends in view.

The predominance of the prolegomena in this investigation is consistent with the spirit of much contemporary, postmodern inquiry. Brann’s approach is underscored by the splendidly post-revolutionary claim that her purpose is “not to change the world but to interpret it!” Viewed in another light, however, the methodology of this book is resonant with the very best ancient authors,

Eva Brann. *What, Then, is Time?* Lanham, MD. Rowman and Littlefield, 1999.
Torrance Kirby is an assistant professor at McGill University.

and its hermeneutical approach reminiscent of Aristotelian science. The first part of the book, a study of earlier philosophical “presentations” of time, constitutes a “history” such as one finds at the outset of many of Aristotle’s treatises. Brann’s study of the attempts of her predecessors to define time is thus by no means any ordinary history. Her extensive review of the preeminent contributions to the hermeneutics of time clarifies wonderfully the question concerning time and enables the reader to make the great ascent from mere study to thought. In the “reflections” of the second part, Brann proceeds intrepidly to face the question “what, then, is time?” head on.

Discussion of the “lispings” efforts of predecessors (*Metaph.* A.1) in this chase turns out to be a daunting task. The relevant texts range “from the hard to the hellishly hard,” as Brann puts it. As in an Aristotelian “history,” the texts are selected with a view to clarification of certain key facets of the problem of definition. Four crucial theories about the nature of time are addressed through the study of four pairs of philosophers. The originality of Brann’s approach is striking. The unexpected pairings - Plato and Einstein, Aristotle and Kant, Plotinus and Heidegger, Augustine and Husserl - prove to be both inspired and illuminating. An important element of Brann’s purpose in this approach is to demonstrate that the larger questions about the nature of time are themselves by no means “time-bound.” By pairing the authors in this way Brann ensures that the problem of definition predominates over less important considerations. The first approach to the theory of time, as exemplified by the arguments of Plato’s *Timaeus* and Einstein’s Special Theory of Relativity, proposes that time is “external,” namely that time refers to external motions of which it is the measure, as in the case of a clock’s measurement of the diurnal rotation of the sun. (The consideration of time as the “externality” of history and its movements is mercifully ruled outside of the present inquiry.) In the cosmos of *Timaeus*, time is the very intelligibility or “numbering” of the external motion of the visible heaven. As Brann puts it, this identification of time with phenomenal motion continues to “bedevil” the dis-

course of physics. Einstein displays little interest in the essential nature of time, but is absorbed rather by the question of quantifying time owing to complications arising from the implication of temporality in locomotion. After the fashion of the hunt for the wily Sophist in the Platonic dialogue of that name, the consequence of this initial “presentation” of a definition of time is to introduce a dichotomous division - namely between time in the world and time in the soul - which is of considerable use to Brann in advancing her own quest for an acceptable formulation. The boundaries have been narrowed considerably by the exclusion of merely “external” time as a fallacy.

Before proceeding to the presentations of internal time, Brann examines a pair who propose highly speculative accounts of the generation of time out of space. Hegel’s dialectical exposition of the genesis of time out of space is put forward by Brann as possibly the most profound of all treatments of “external” time. For Hegel, time from its first genesis as a pure Becoming, behaves like incipient spirit (*Geist*): “Time is the Concept itself that is *there* and which presents itself to consciousness as empty intuition. For this reason Spirit necessarily appears in time, and it appears in time just as long as it has not grasped its pure Concept, that is, has not annulled Time” (*Phenomenology* ¶ 801). Through a discussion of Bergson’s mission to suppress “extensive space” in favour of “intensive time” Brann effects a transition to the second principal stem, viz. internal time or “time in the soul,” which is the general focus of the remaining three pairs of texts in the series of presentations.

With her examination of the theories of Aristotle and Kant, Brann arrives at the second crucial stem of the dichotomous division of time into the categories “external” and “internal.” Although for Aristotle motion is properly the “substrate” of time, while conversely for Kant time is itself the ground of motion, both philosophers are “driven” to relate the notion of time to a “psychic counting.” As Aristotle says, “time is the number of motion” where motion is understood as disclosing continuous magnitude. The “truth” of time resides in the numbering or counting soul that meas-

ures the before and after of this magnitude. Time, according to this presentation, is no longer viewed as an independent, “substantive” reality or but is rather reduced to the status of an accident or predicate which exists “for thought.” For Brann, Kant’s treatment of time displays a deep affinity with Aristotle’s on this more general level. The internal sense of time, however, represents much more in the Kantian metaphysics than ever dreamed of by Aristotle. For Kant this psychic counting is perhaps the most intimate characteristic of humanity. Indeed Brann shows that Kant’s treatment of time is most accessible when the *Critique of Pure Reason* is viewed as “a new founding of human nature whose centre *is* time” (55). Appearances may be removed from time but not the reverse, which reveals that time, for Kant, is prior in the order of knowing; the apprehension of change is understood to depend upon the *a priori* intuition of time. In one of numerous penetrating aperçus scattered throughout the discussion, Brann draws attention to Kant’s nonetheless restricted view of our ability to know ourselves as temporal beings by reminding us of his low opinion of music. This, in turn, is contrasted with Leibniz’s opposing exaltation of the unconscious counting of the soul in music as “a pleasure given to us by God so that we may know of him; in music soul is revealed to itself and God to it” (*Principles of Nature and Grace* ¶ 14).

In the subsequent paired “presentations” of Plotinus and Heidegger, the inquiry proceeds to consider the “ground” of temporality—that is, of some higher, possibly transcendent source of this inner sense of time. Thus the dichotomous division of the “hunt” advances to a new level of precision. For both Plotinus and Heidegger, as Brann shows, time constitutes the “deepest condition” for humanity. Plotinus identifies time with specifically “human” being in its manifestations of a peculiarly ecstatic nature, by the human’s attempt to escape the element of its temporal fallenness. The Soul’s very “appetite for things to come” (*Enneads* III. 7.4, 34) keeps her in her fallen state. Temporal being strives for salvation, viz. the overcoming of temporal “dispersion,” through union with the eternal hypostasis above. Happiness, understood as

“the flight of the alone to the Alone,” is thus altogether outside time, for it is no mere mood or emotion, but rather a fundamental possibility for the soul, that of an undispersed present even beyond being (*Enneads* I. 5.7, 15). Time is made explicable through eternity, its original ground. Although radically distinct from Plotinus with respect to virtually the entire substantive content of his thought, Martin Heidegger at least shares with Plotinus the supposition that temporality is the key to understanding human existence. As a being whose essence is its existence, this ultimate ground is for Heidegger not the transcendent eternity of the Plotinian Primal Hypostasis, but rather the temporality of human being itself, *Dasein*. The discussion stemming from this remarkable dialectical pairing of Heidegger and Plotinus is particularly illuminating.

In chapter four Brann arrives at her final pairing of Augustine and Husserl with the observation that no two philosophers are both further apart and closer together. Through an examination of their discourse on time as a temporal “stretching” of the soul (*distensio*, as Augustine puts it), the argument—for it is indeed an argument—acquires a distinctly sharper dialectical edge. The coincidence of identity and difference in their thinking about time is uncannily appropriate to their strongly dialectical approaches to the quest to define time. According to Brann, while Augustine sifts through the phenomena in search of existence and while Husserl neutralizes existence in order to find the phenomena, both look within themselves for the phases of time, that is to say, for past, present, and future. For both philosophers, Brann argues, the problem of “internal” time is not to be referred to a higher ontological ground for resolution, as is the case with Plotinus, for example, but rather time is to be understood as arising out of and discerned within the soul or consciousness. Brann’s argument on this point is open to some dispute, at least with reference to Augustine if not to Husserl. Perhaps the device of pairing the presentations has led to a downplaying of Augustine’s affinity with Plotinus. It is common among contemporary existential readings of Augustine to de-emphasise his dependence upon Neoplatonic metaphysics. He begins his presen-

tation on time with the "*in principio*" of Genesis 1, the revelation of the divine creative activity understood as totally beyond the temporal, narrative realm of human existence. In making his transition in *Confessions* from Book X on memory to Book XI on time, Augustine shifts gears as it were from looking within at the phenomena of consciousness to looking *above* at the higher ground of the life of the soul, *ab interiora ad superiora*. The Creator, who is altogether above the flux of becoming, is understood nevertheless by Augustine to be present, knowing, and active within the temporal realm.

While temporal human existence, dispersed or "distended" as it is through phases of past, present, and future, is to be contrasted absolutely with the undivided existence of "the One," Augustine finds nonetheless within the soul as *imago dei* a positive image of the activity of God in creation. The enigma of the human experience of time is thus referred by Augustine to the exemplar of the Trinity for resolution. In the psychological image of the Trinity—*memoria, intellectus, et voluntas*—Augustine finds a model for his reflection upon the experience of time as at once continuous and without extension. He points to the chanting of a psalm as a potent revelation concerning time. He reflects upon the recitation of a song that he knows, Ambrose's hymn *Deus Creator Omnium*. The song is stored in memory, an already completed whole which the soul intends to sing. Before singing, the soul's expectation possesses the complete song. As the soul sings, the relation of expectation to memory shifts syllable by syllable until the entirety of expectation has finally become a memory of the song as completed, as having been sung. Memory, presence, and expectation are united *in the song*. Through the singing of praise, itself a mode of confession, Augustine begins to see how the timeless and the temporal become one. Through song the soul is enabled to think the divine object *in the image*, and this, Plotinus certainly would regard as the most extreme absurdity. Thus, by "collecting" ourselves, we can escape from our temporal constitution into God's "standing Now," as Brann puts it, into eternity.

Brann concludes the part devoted to presentations of time with an extensive and complex analysis of Edmund Husserl's phenomenological treatment of internal time-consciousness. The text of Husserl's *Zur Phänomenologie des inneren Zeitbewußtseins* we owe, Brann tells us, to Edith Stein's supererogatory editing of various manuscripts and notations. By way of a background sketch, Brann offers a helpful introduction to Phenomenology itself and looks at the influence of Augustine, William James, and Franz Brentano on Husserl's reflections upon time. Husserl is particularly engaged with the problem of integrating the phases of time. Brann claims that he in fact "solves the problem of relating the present, the moment of primary perception to its immediate retentional past and protentional future by giving a model for the orderly sinking away of perceptions and their intertwining with present consciousness" (160). With Husserl, the presentations have in a certain sense come around full circle. Husserl brings his account of time to completion by reconstituting "external" time in the form of an absolute temporal flux which transcends the temporal phenomena of internal time-consciousness and which is, moreover, the underlying principle which sustains human subjectivity. As Brann concludes, Husserl's ultimate temporal flux is "a very nearly inarticulable *final fact*" (156).

In the Second Part of the book, titled "Reflections," Brann purports to *finally* face the question "What, then, is time?" (The claim that the "Presentations" are a mere exercise in "study" and that only now, in the final pages is she going to roll up her sleeves and get down to the serious business of "thought" seems not entirely ingenuous. Already a good deal of hard thinking has gone into both the pairing itself and the ordering of the pairs, all of which serves to advance the quest for a definition.) The reflections proceed with a consideration of certain formal similarities between time and the faculty of imagination - here, once again, is the Sophist and the wedding of Being and Nonbeing. Brann shows that images present a relatively constant picture, viz. Being and Nonbeing in *fusion*, while time, on the other hand, is a flux of

“Being as passing over into Nothing and Nothing as passing over into Being” (Hegel, *Phil. of Nature* ¶ 259). Time and imagination are thus connected with one another through the way Being is related to Nonbeing in both temporal process of becoming and in images. As might well be expected, Brann offers a fascinating comparison of these concepts by building upon her previous exploration of the faculty of imagination.²

There follows Brann’s own interpretation of the phases of time together with their appropriate faculties: past and memory, future and expectation, present and perception. Throughout, she draws upon the foregoing presentations of time by the philosophers which provide both the categories and a vocabulary which enable Brann to penetrate the question deeply and swiftly. This section of the book is a wonderful demonstration of the dictum of Bernard of Chartres who claimed to be able to see things far off by virtue of “standing on the shoulders of giants.” In an interesting and frequently amusing section Brann proceeds to analyse various “time pathologies” as forms of “phase-fixation.” Here we have an opportunity to reflect on aspects of time’s “brutal tyranny,” e.g. the contemporary idolatry of novelty, a fixation on the “just now,” the trivialising of the past in nostalgia or the future obsession of the IT phenomenon. Brann even reviews cures for these time-induced pathologies such as that offered by Nietzsche in his teaching on the Eternal Recurrence of the Identical. Brann counters this frantic cycle of reincarnation with another, much more attractive option, namely the concept of *Aevum*, as manifest in the sempiternity of the angels in heaven or, alternatively, in the fictional temporality of the novel. All of this is delightful. Brann recommends the cultivation of “aeveternity” as at least “a partial relief for our temporal ills.”

In the last chapter of the book Brann moves closer to the final struggle with the definition of time by way of a *via negativa*. Here time is finally unveiled as the potent, indeed tyrannical, non-entity. The revealing is apophatic. Time is *not* external motion, *nor* is it an abstraction from process. It is *not* a power or force, *nor* a “fungible substance” (i.e. time is not even money!). Time is certainly *not* a

mere linguistic usage. As Brann succinctly puts this point, “Language can guide thought but it cannot constrain it.” (Brann notes in passing how neatly the distinctions of philosophical inquiry concerning time seem to turn up in the problems of linguistics.) Time is *not Dasein*. Whereas Heidegger regards human finitude as ultimately expressed in the fact our mortality, that our existence is “destined” to end, Brann counters optimistically that human finitude is better sought in the fact that we *begin*, “we do not temporalize ourselves; we are born temporal.” Time is no determinate being; it is *not* perceived by the senses, it is without external effects, and elusive to insight. Time is therefore a *non-entity*. Though apparently nothing, time’s “not-being” is nonetheless very powerful (although, be it noted, *not* “a power”). “*What, then, is time?*” Here the argument finally shifts from marked *apophasis* to a more *kataphatic* note. The affirmative definition comes in nine-fold form (a touch which no doubt would have pleased Pythagoras). It is not this reviewer’s intent, however, to spill the beans. In order to reap the full benefit of Brann’s final, dramatic unmasking of Time—to be altogether “present” as it were at the capture of this elusive beast—readers are well advised to follow the leader of the hunt herself along the trail through all its intricate twists and turns. And who indeed are the intended participants in this quest? Brann recommends her book to anyone who longs to learn about time by pursuing the quest described above, to aficionados, to students who seek to come to grips with some of the primary texts on time, and finally to teachers who might be on the look-out for some tips on selections for a syllabus on the interpretation of time. This is an unusually difficult book whose author challenges the reader to “take note” and whose rewards are proportionate to the investment of careful, punctuated *attention*.

NOTE:

1. See Eva Brann, *The World of the Imagination: Sum and Substance* (Lanham, MD: Rowman and Littlefield, 1991).

The Feasting of Socrates

Eva Brann

Before reviewing Peter Kalkavage's Focus Press translation of the *Timaeus* for the St. John's community, I must, in all fairness, confess my partiality. He, Eric Salem, and myself were the cotranslators of Plato's *Phaedo* and his *Sophist* for the same publisher. Together, over several years, we worked out some principles of translation which are discernible in this *Timaeus* version. In fact, I think the three of us would welcome with some glee the notion of a St. John's school of translation. For we wanted to be working very much with the spirit of the Program and a possible use by our students in mind. We thought that translations of Plato should render word for word, even particle for particle, with the greatest exactitude, what the Greek said, avoiding all interpretative paraphrase, craven omissions, and latter-day terminology. But we also stipulated that they should catch the idiomatic expressiveness and the changing moods of the original. These principles are clearly at work in this rendering of the *Timaeus*.

We learned as well, however, that each dialogue is a unique universe of discourse, the artful representation of an inquiry with its own approaches, terms, settings, and above all its own participants, each of whom is in a mood specific to *this* never-to-be-repeated, yet ever-to-be-continued conversation. Thus it follows that the *Timaeus* made its own particular demands on the translator. It is, after all, less a dialogue than a short tale of antiquity by Critias followed by an account of the cosmos by Timaeus—a long one. The familiar voice of Socrates falls almost silent as these speeches are made to be a feast for his enjoyment—or, perhaps, amusement. Timaeus's cosmology is full of the sort of technical matter Socrates does not scruple to spoof in the *Republic*—the very dialogue which establishes the sort of ideal city that his companions agree to bring to moving life for him by giving it its historical and cosmological setting.

Timaeon cosmology involves not only the moving spheres and circles that bear the astronomical bodies and the geometric elements from which they are constituted, but also the musical “harmonies” (scales) that ensoul the heavens. Three beautifully clear appendices provide the reader—and this edition is meant for the “adventure-some beginner”—with the fairly elementary knowledge needed to enjoy this heavenly entertainment. It should be said, though, that the cosmological astronomy of the *Timaeus* together with its sober mathematical exposition in Ptolemy’s *Almagest* was the serious science that stood behind the New Astronomy of the dawn of modernity. (There is a story—I cannot vouch for its truth—that in the early days of the St. John’s Program books of astronomy and physics were to be found in the library ranged under “Music,” courtesy of the *Timaeus*.) The dialogue is so full of Greek science that there is a danger of regarding it as a source of antiquarian problems. But, the translator observes in his Preface, that is the very danger, the one of reducing the cosmos to a collection of mummified facts and recondite puzzles, to which the Egyptian priests are said to fall prey. So less is more by way of learned exegesis, and the well-illustrated appendices give just enough to make the dialogue intelligible to an amateur.

Since I’ve started at the back, let me say that here too you will find an English to Greek glossary. The entries tell not only how a Greek word is translated and, if more than one translation has to be used, why that is necessary, it also gives the root or central meaning and others that flow from it. In sum, the entries are a pretty interesting lesson in philosophic Greek.

To go to the front end of the book, there is, besides the Preface, the Introductory Essay. The *Timaeus*, the only Platonic dialogue known in medieval times and in all epochs the most influential one among those philosophers to whom the constitution of the cosmos was of central interest, is also, in Peter Kalkavage’s words, “the strangest of Plato’s dialogues. It is so strange that one wonders whether anything can be taken seriously . . . [It] is strange not only to us but also in itself.” The Introduction is intended to illuminate

that strangeness without dispelling it. The odd but necessary question is pursued: What is the *Timaeus* about? Socrates is all dressed up (*kekosmenos*) and in a strange mood. He gives a truncated, philosophy-free version of his *Republic* and asks to be told about this stripped-down political blueprint mobilized to go to war. The resulting verbal feast prepared for him among the three eminent men who are present (one mysterious fourth is absent) has an oddly skewed relation to the truth and the love of wisdom that are Socrates’ normal preoccupation, for it is presented as a “likely story,” and a story of likenesses, the way of being that is so dubious for Socrates.

The festivity begins with Critias’s retelling of an antiquarian tale about archaic Athens as told by the Egyptian priests to the visiting lawgiver of Athens, Solon. We hear that this old Athens, ancient even to the ancients, once defeated a huge and sinister island empire called Atlantis.* Critias thus presents a pseudo-historical Athens as the embodiment of a “pale image” of the *Republic*. There is plenty to puzzle about in this beginning.

For this city Timaeus supplies the cosmic setting; we are invited to wonder how fitting it is. A divine craftsman appears out of nowhere and makes the cosmos, the well-ordered beautiful world, in the image of an original model. Hence the cosmos has two wonderful features. It is a copy and thus, while imperfect in its being, capable of being in turn a model, as it indeed is in the dialogue. And second, it is intelligible, interpretable, not only as an intentionally made work of art, but as en-, or rather, circum-souled. For whereas the human animal has its soul within, the cosmos is encompassed by bands of soul matter. All these wonderful and significant doings can be read in the dialogue, but the Introduction brings out their thought-provoking strangeness and their relevance to our humanity.

Thus after the cosmic construction there is a harsher “Second Founding.” It has an elusive “wandering cause,” the “source of power as opposed to goodness”—an intra-cosmic, semi-intractable cause called “necessity” acting in a scarcely intelligible theater of

operation, space. Within it arise body and the human animal: "The making of man for Timaeus is a pious desecration," says the Introduction. It is delegated by the Craftsman-father to his star-sons.

This part of the *Timaeus*, the coming-to-be of organic life within the cosmos, is so weird that our undergraduates aren't even asked to read it, yet Peter Kalkavage shows how to begin to make humanly applicable sense of it.

Finally he returns to the question: "Why is the greatest philosophical work on the cosmos framed by politics?" An answer is suggested: The frame signals Plato's reflection on what happens when the Socratic search for truth is replaced by a Timaeian will to order. But this shift to the constructive will might well stand for the revolution that initiated our modernity. The means to this new age are also adumbrated in this miraculous dialogue; in his final assessment of the *Timaeus* Peter Kalkavage says that "the likely story presents the paradigm of what it would mean to use mathematical structures to make flux intelligible—at least as intelligible as possible." Twenty-one centuries later the calculus will perfect these structures, and so the science by which we live and which Plato has prefigured will really take off. Read this introduction to get a sense of what it means for a work to be *great*, to see deep into things and far into time.

But better yet, read the splendid translation framed by the valuable apparatus. It is trustworthy; it sticks close to the text, word for word. But it is also readable—not translaterese but good, lively, and flexibly intoned English, since faithfulness in translation includes preserving something of the literary quality of the original. This dialogue in particular is, for all the wild exuberance of its philosophical imagination, written in fresh, plain Greek, though plain terms are often put to novel uses.—Would you expect to find Being, Becoming, Same, Other, ordinary words with a gloss of high philosophy, in a cosmological context? Perhaps the best example is the divine Craftsman. As the translator points out in the glossary, the Greek word, which has passed into English as "demiurge," merely

means a skilled worker available for orders from the public, so it was just right to preserve that sense with the plain English word. To help with background knowledge, there are lots of footnotes right on the page.

Here's my recommendation, then: We have all these wonderful alumni seminars around the country. Why not devote one here and there to a reading of the *Timaeus*?—And perhaps some participants might take advantage of Peter Kalkavage's translation (which is, incidentally, purposely inexpensive). I'd love to come and help, and so, I imagine, would he.

*I can't resist a footnote.

In our own last century, there have been droves of people, many of them now active, who have fallen into Plato's antiquarian trap and gone in search of this lost continent. The description of the island, which enormous geometrically planned public works have transformed into something formidably awful, is set out in the dialogue *Critias*. Its Speer-like architecture (Speer was Hitler's architect) appealed to the Nazis, whose mythmakers represented Atlantis as an early Nordic utopia, to be rediscovered by state-sponsored archaeologists. These people had at least got it right with respect to the scariness of the drawn-and-quartered, brass-walled locale. Most modern representations, be they in books, songs, or movies (of which Disney's "Atlantis" is the latest) are governed by the mistaken notion that Atlantis was meant to be a lost place of marvels and beauties, a sort of mid-ocean Shangri-la. It's actually a totalitarian topography, the triumph of the will over nature.