

PLATO'S "MIDDLE" CLUSTER

DEBRA NAILS

IT IS WRONG, Jacob Howland has argued,¹ to use any proposed chronological order of Plato's dialogues as an interpretive lens. Wrong, but extraordinarily widespread. Wrong in conception and in consequence. Wrong in conception, because all chronological investigations of Plato—whether historical, philosophical, literary critical, or stylometric—are philologically and methodologically flawed in a host of respects. Wrong in consequence, because this preoccupation of contemporary Plato scholarship prohibits "whole ranges of fruitful inquiries and insights suggested by the texture of the dialogues themselves" (212). And Howland is right. While roundly criticizing statistical stylometric analysis, however, he has overlooked a significant use of that tool by Gerard R. Ledger² that, albeit incidentally, provides evidence against the chronological sequence proposed within the now dominant scholarly tradition³ with compelling data for the statistical isolation of a set of "middle" dialogues previously unrecognized as closely connected.

As Howland readily acknowledges (209), Ledger advances beyond previous statistical efforts by arguing against the assumption that relative dates of composition can be read directly and linearly from changes in authorial style. Further to his credit, like few other stylometricians, Ledger avoids the bias that accompanies the selection of particular grammatical forms by measuring not deliberate but unconscious aspects of Plato's style. To achieve this, he divides the corpus (forty dialogues, letters, *dubia* and *spuria*) into 493 1000-word segments, then computes the number of words containing each Greek letter and, to capture something of the highly inflected nature of Greek and thereby stand a better chance of measuring something meaningful about Plato's style, he also counts words with specific letters in the

¹Jacob Howland, "Re-Reading Plato: The Problem of Platonic Chronology," *Phoenix* 45 (1991) 189–214.

²G. R. Ledger, *Re-Counting Plato: A Computer Analysis of Plato's Style* (Oxford 1989).

³A variant sequence was recently defended by Gregory Vlastos, *Socrates: Ironist and Moral Philosopher* (Cambridge 1991) 46–47. Although Vlastos says he orders the dialogues "solely by the philosophical content" (his emphasis), he also welcomes the support he believes he gets from stylometricians, remarking in the same passage that their agreement is "particularly significant."

penultimate and ultimate positions, for a total of 37 variables per segment.⁴ As a control, Ledger mixes in twelve works by six other ancient authors and treats them the same way.⁵ Howland's point that Ledger's "procedure becomes circular" (210), while true of the project as a whole, is misleading because it does not apply to the independent parts. A central strength of Ledger's work is that, at each stage, he provides many raw data for anyone who might wish to analyze them differently, and much information about the wide range of statistical techniques he uses, including those that failed.

In what follows, I offer an analysis of some of Ledger's raw data, *before* the method becomes circular, before he selects particular subsets of variables to trust, before he leans on any presumed chronology (e.g., that the *Republic* pre-dates the *Laws*).⁶ Having computed a numerical indicator of the style (relative frequency of letters) for each of the 52 works in his study, taking into account all 37 variables, Ledger introduces another useful technique, derived from canonical discriminant analysis, a tally of similarities and differences among the works, comparing each to all the others, one by one, and expressing the results as "Mahalanobis distances." In the discussion that follows, I shall be referring to "neighbors" of particular works, by which I mean whatever other works have been calculated as having greatest stylistic affinity to (i.e., shortest Mahalanobis distance from) the first. When all the works are analyzed, using all the variables, then plotted in relation to one another on a graph, they cluster the way houses might in a rural area, a few here near the river, a few there on the hillside, and several scattered about on their own.⁷ Distances among the works (those of Plato and of the other authors) range from 2.66 (for the closest neighbors, *Protagoras* and *Symposium*) to 13.94 (the distance between Isocrates' *Panathenaicus* and Plato's *Parmenides*).⁸

Note that there are two interesting ways of looking at Mahalanobis distances: absolutely, by number (low numbers mean short distances); and relatively (every dialogue has a "nearest neighbor"—even if that neighbor is very far away, and even if that neighbor has many very close neighbors of its own). Consider the closed set of Montreal, Toronto, New Orleans,

⁴I am simplifying his overall method; for particulars see Ledger (above, n. 2) 4–19.

⁵Strictly speaking, as an anonymous *Phoenix* referee points out, there are twenty works: Ledger treats the nine orations of Isaeus as a unit.

⁶Aristotle *Politics* 1264b26.

⁷Again I must omit details of the method: Ledger (above, n. 2) 42–43, 128–169. I should add that the actual graph would require 37-dimensional space.

⁸It would have been helpful if Ledger had calculated the works' "distances" from themselves, i.e., the lower limit on reasonable expectation. These data could have been generated by performing a run in which all works had been divided in half, with the halves treated as individuals. Presumably, the distances between halves would be small, presumably smaller than the distances to even closest neighbors, but data beat presumption every time.

and three towns just south of New Orleans. Montreal is Toronto's nearest neighbor, Toronto is Montreal's nearest neighbor, and the distance between them is relatively short; but Toronto's second-nearest neighbor is New Orleans, even though the distance is great, and even though Toronto is New Orleans' fourth-nearest neighbor.

Back to Athens. If Mahanalobis distances are to be trusted as measuring something real, then, for a known group of similars (say, the works of Isocrates: *Antidosis*, *Archidamus*, *De pace*, *Panegyricus*, and *Panathenaicus*), one would expect small distances among the speeches and no interference from outsiders such as Platonic dialogues—even though the writings of Isocrates span some forty years. That is exactly what the data provide. When Ledger lets the computer scatter all 52 works on the basis of stylistic affinity alone, without so much as telling the computer who is the author of what, the five Isocratic speeches form themselves into a hermetically sealed cluster, naming only one another as neighbors to the fourth degree; and their average distance is 3.03 at the first position and 3.59 at the fourth. When fifth-nearest neighbors are introduced, forcing other authors' works to be named, they come in at a minimum distance of 7.22—a rise too steep to ignore. Can we expect anything like that coherence for Plato? Close, but not quite.

The remarkable cluster of Platonic dialogues is *Critias*, *Epinomis*, *Epistle 7*, *Laws*, *Philebus*, *Politicus*, *Sophist*, and *Timaeus*, for all of which Ledger lists neighbors to the eighth degree. Through the sixth position, this set of works generates only its own members as neighbors except that *Epistle 7*'s second-nearest neighbor, and the *Philebus*'s fifth-nearest neighbor, is *Phaedrus*.⁹ In calculating first-position (nearest) neighbors, the average distance between dialogues is 3.64 within a range of 3.34–4.09. If neighbors to the fourth degree are allowed, the range increases to 5.72, and the average distance between neighbors rises to 4.28. As one might say, the works of Isocrates are crowded close together down in the valley; a cluster of Platonic dialogues, not quite so densely packed, forms an isolated neighborhood halfway up the mountain. Some distance away lies *Phaedrus*, which is the gateway to yet another distinguishable community, of which more below.

The fact that the Isocratic speeches, and the Platonic dialogues called "late" in the literature—regardless of when they were written—form such

⁹At the seventh position, considerable deterioration sets in: Xenophon's *Memorabilia* appears as neighbor to *Epistle 7* and the *Phaedrus* appears for three additional dialogues; at the eighth position, the *Theaetetus* appears for the *Philebus*, Lysias's *Against Eratosthenes* appears for the *Politicus* and the *Phaedrus* claims two more dialogues. It is worth noting that, although all these works except the *Politicus* show affinity to the *Phaedrus*, that dialogue's greatest affinities are to other works altogether; not a single one of its first eight neighbors is one of these dialogues, so that Ledger labels it "transitional" (210).

Table 1. Absolute Mahanalobis Distances to 4.0
(greater distances are indicated by dashes)

	<i>Alc. 1</i>	<i>Chrm.</i>	<i>Grg.</i>	<i>Meno</i>	<i>Phd.</i>	<i>Phdr.</i>	<i>Prt.</i>	<i>Resp.</i>	<i>Symp.</i>	<i>Tht.</i>
<i>Alcibiades 1</i>	.	—	3.52	3.67	—	3.82	—	3.85	3.88	—
<i>Charmides</i>	.	—	—	—	—	—	—	3.91	—	—
<i>Gorgias</i>	.	.	3.66	—	—	3.39	3.99	3.79	—	—
<i>Meno</i>	.	.	.	—	—	—	—	—	—	3.59
<i>Phaedo</i>	3.93	3.69	3.32	3.06	3.23	3.23
<i>Phaedrus</i>	3.53	3.27	3.36	3.12	3.12
<i>Protagoras</i>	—	2.66	3.65	3.65
<i>Republic</i>	3.96	3.61	3.61
<i>Symposium</i>	3.67	3.67
<i>Theaetetus</i>

tight clusters provides more than a modicum of confidence that using Mahanalobis distances to measure the vague notion of *style* is justified. Before venturing out to seek other clusters in the Platonic corpus, however, I acknowledge two restrictions: (a) I attach no significance to stylistic affinity greater than 4.5, so if I err I mean to err on the side of miserliness; (b) rather than subtract some unavoidably arbitrary number of points for *genre* differences, I do not use Mahanalobis distances at all for claims about the affinity of *Menexenus*, *Parmenides*, *Cratylus*, and *Ion*—none of which have neighbors within shouting distance—to other dialogues or letters.

If 4.5 were allowed as the stylistic affinity standard, not only would the *genre* pieces be excluded, but neither *Euthyphro* nor *Hippias Minor* would make the cut, having no neighbors that close. Several other dialogues would be conspicuous outliers, having only one or a few distances below 4.5: *Apology*, *Crito*, *Euthydemus*, *Hippias Major*, *Laches*, and *Lysis*; any explanation for their remoteness lies outside my investigation.¹⁰ I would rather push in the opposite direction, ignoring these dialogues altogether. Because I am curious about this thing I am calling *stylistic affinity*, because I believe the chances are good that Ledger measured it, aided by Mahanalobis distances, I would push the standard even further, allowing no scores higher than 4.0, in an attempt to press for coherence approaching that of the "late" group. Table 1 illustrates all and only those dialogues that achieve

¹⁰Ledger himself has not only interesting ideas about this issue—particularly its connection to the lengths of the dialogues, and the possible application of an absolute geometric sum of squares distance—but quite a cache of further results and significance tests left over from the enormous project he whittled down to 250 pages for its publisher. I am most grateful for his kind correspondence with a stranger about these matters which he has investigated so intricately. It is unclear whether a systematic correction for dialogue length should be introduced, more so the appropriate magnitude and possible significance of such a correction. I do not have at my disposal the means to extend Ledger's research in the direction I would wish in the promising way he suggests, but I believe that such an extension is warranted.

Table 2. Relative Distances: Nearest Neighbors to the Fourth Position
(parentheses indicate distances higher than 4.0)

	Nearest	Second	Third	Fourth
<i>Alcibiades 1</i>	Grg.	Meno	Phdr.	Resp.
<i>Charmides</i>	Resp.	(Phd.)	(Phdr.)	(Tht.)
<i>Gorgias</i>	Prt.	Alc. 1	Meno	Symp.
<i>Meno</i>	Tht.	Grg.	Alc. 1	(Laches)
<i>Phaedo</i>	Symp.	Tht.	Resp.	Prt.
<i>Phaedrus</i>	Tht.	Resp.	Symp.	Prt.
<i>Protagoras</i>	Symp.	Grg.	Phdr.	Tht.
<i>Republic</i>	Phdr.	Phd.	Tht.	Alc. 1
<i>Symposium</i>	Prt.	Phd.	Phdr.	Tht.
<i>Theaetetus</i>	Phdr.	Phd.	Meno	Resp.

Mahanalobis distances of 4.0 or lower; higher distances have been suppressed as unreliable for signifying stylistic affinity.

This cluster is even more coherent than the "late" group, and almost as impressive as the Isocratic group. The distances are closer here than among the "late" dialogues: at the level of nearest neighbor, the average distance is 3.23 (within a range of 2.66–3.91); at the fourth degree, the average is 3.53. At the very center of this group, four dialogues lie almost on top of one another, *Phaedrus*, *Protagoras*, *Symposium*, and *Theaetetus*; just outside them are *Phaedo* and *Republic*, then—only slightly further away—*Gorgias* and *Alcibiades 1*, then *Meno*, then *Charmides*. The same pattern is represented by the neighbor analysis of Table 2.

The ten dialogues name only one another as neighbors to the fourth degree except that the *Meno* points outside the set to the *Laches* at the fourth position (their Mahanalobis distance is an almost comical 4.01).

What have we here? On the purest of stylistic grounds, those who insist on a linear chronology have an argument for a set of "middle" dialogues.¹¹ I say "middle," not early, because of the persistent connection between the "late" dialogues and *Phaedrus*, which is itself firmly ensconced in the set I have just identified.¹² Are there any surprises? Well, half these dialogues are incompatible with Vlastos's content-based chronology. The appearance of *Protagoras*, *Gorgias*, *Meno*, and *Charmides* here in close association with dialogues of what Vlastos views as Plato's mature period would need to be explained. Although Kahn has proposed later dates for all but *Gorgias*, his

¹¹Because Ledger evaluates data produced by several different techniques, introduces external considerations, and integrates the dialogues I have eliminated because of *genre* difference, the chronology he finally proposes has a significantly different "middle" appearance (cf. Ledger [above, n. 2] 224–225).

¹²Because I believe with Howland that the quest for a chronology does more harm than good to the interpretation of Plato, I prefer designations that avoid any hint of chronology, but that is a complex argument for another day.

chronology provides no better overall fit than Vlastos's. Thesleff, eschewing stylometry to argue that the Platonic corpus was substantially edited, revised, and imitated in Plato's lifetime, notes "final" revisions in his proposed chronology, but this provides no better than fair compatibility with the stylometric data outlined above. Guthrie's fit is poorest of all, especially because he considers the *Theaetetus* late. Perhaps more surprising than the chronological issue is the solid performance of *Alcibiades 1* (spurious to Brandwood, Guthrie, Kahn, Thesleff, and Vlastos);¹³ but perhaps not so surprising, given that the *Epinomis* nests so comfortably among the "late" dialogues. As Ledger suggests ([above, note 2] 93), imitative writing may confuse a computer.

Still I would repeat, following Howland, that the hidden premise in the portion of this analysis that urges "middle" on us as a chronological category is that order of composition can be derived directly from affinity of style; that, as already noted, is a claim for which we have precious little independent evidence. Ultimately, even when an unbiased stylistic analysis confirms one hypothesis—and some will no doubt feel vindicated by the bright constellation of traditionally "late" dialogues—it dashes a few others in the process.¹⁴

DEPARTMENT OF PHILOSOPHY

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

(1080 KNAPP ST. N.E.

GRAND RAPIDS, MI 49505)

¹³Leonard Brandwood, *The Chronology of Plato's Dialogues* (Cambridge 1990); W. K. C. Guthrie, *A History of Greek Philosophy 4. Plato the Man and His Dialogues: Earlier Period* (Cambridge 1975) 50; Charles H. Kahn, "Did Plato Write Socratic Dialogues?," *CQ* NS 31 (1981) 305–320; *idem*, "Plato's Methodology in the *Laches*," *RIPh* 40 (1986) 7–21; and *idem*, "On the Relative Date of the *Gorgias* and the *Protagoras*," *Oxford Studies in Ancient Philosophy* 6 (1988) 69–102; Holger Thesleff, *Studies in Platonic Chronology* (Helsinki 1982, *Commentationes Humanarum Litterarum* 70) 236–238; and *idem*, "Platonic Chronology," *Phronesis* 34 (1989) 1–26.

¹⁴I am grateful for W. Levitan's insistent criticism, and to the anonymous *Phoenix* referee who called for a missing set of scare-quotes and thereby prevented a major misunderstanding.