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Prometheus Bound and Contemporary Trends in Greek Natural Philosophy

Georgia L. Irby-Massie

THE *PROMETHEUS BOUND* is a lively testament to the Greek intellectual achievement of the sixth and fifth centuries B.C.E. In Aeschylus' poetry one finds subtle reflections of the new learning and advances in both ethical and natural philosophy.¹ For instance, Apollo's defense of Orestes, that the mother is not even related to her children, but rather that the father provides the "seed" and the generative material, evinces the current state of medical theory and anticipates Aristotle's efficient cause.² Okeanos' mandate to Pro-

¹ See J. Duchemin, "La justice de Zeus et le destin d'Io. Regard sur les sources proche-orientales d'un mythe eschyléen," *REG* 102 (1979) 1–54; D. Cohen, "The Theodicy of Aeschylus. Justice and Tyranny in the *Oresteia*," *G&R* 33 (1986) 129–141. Thomas G. Rosenmeyer, *The Art of Aeschylus* (Berkeley/Los Angeles 1982) 371, suggests that the intellectual theories broadcast by sophists, including Gorgias and Protagoras—both born about a generation before Aeschylus' death—were not fully available in Athens in Aeschylus' time. However, Aeschylus may have become familiar with the rhetorical theories of Gorgias during his visits to Sicily: C. J. Herington, "Aeschylus in Sicily," *JHS* 87 (1967) 74–85, at 74. Kratos, as he binds Prometheus, calls him a "sophist" (σοφιστής, *PV* 62), as does Hermes in his opening words to Prometheus (σὲ τὸν σοφιστήν, 944). The term seems already pejorative: A. J. Podlecki, *Aeschylus: Prometheus Bound* (Oxford 2005) 163 and n.3. The characters, nonetheless, are fully mindful of the methods which the sophists would later employ, as they fail to persuade: Zeus' persuasive words will not sway Prometheus (172); Prometheus was unable to persuade the Titans (204–206); Prometheus assures Okeanos that Zeus cannot be persuaded to ameliorate Prometheus' punishment (333); pronouncements from Delphi finally persuade Io's father (669); Hermes is unable to persuade the chorus to abandon Prometheus (1064).

² Aesch. *Eum.* 652–664; cf. Arist. *Gen.An.* 763b30–33, *Ph.* 195b12–30. Aristotle ascribes the theory to Anaxagoras, and Malcolm Schofield, *An Essay on Anaxagoras* (Cambridge 1980) 34, suggests that Anaxagoras' theory

metheus to “come to know yourself” (γίγνωσκε σαυτόν, 309) echoes the maxim inscribed at Delphi (Paus. 10.24.1) as well as a dictum attributed to Heraclitus, that he claimed to have searched himself out, ἐδιζήσαμην ἐμεωυτόν (DK 22B101). Kahn suggests that this little fragment may presuppose the Delphic maxim or even the Christian ideal of alienation from one’s (true) self.³ Awareness, knowledge, and understanding—of self and of one’s environment—were the very cornerstones of early Greek philosophy whose purpose was to seek the causes of things and to understand the natural world. For Heraclitus and others, this line of rational inquiry was the path to wisdom (B41).⁴

That Aeschylus engaged with philosophy has not gone unnoticed.⁵ In Athenaeus (347E), Aeschylus is recognized as a great philosopher, and Clement of Alexandria connected a passage from the lost Aeschylean *Heliades* to Heraclitus’ conception of the divine, that Zeus represents (rather, *is*) the elemental properties of the cosmos.⁶ The motif of the four elements in *Prometheus Bound* has been explored,⁷ and Pythagorean concepts have also been noted and analyzed.⁸ Rösler

may have influenced Aeschylus. See also Wolfgang Rösler, *Reflexe vorsokratischen Denkens bei Aischylos* (Meisenheim am Glan 1970) 56–87.

³ C. H. Kahn, *The Art and Thought of Heraclitus* (Cambridge 1981) 116.

⁴ Invaluable for Heraclitus is Kahn, *Art and Thought*; for Empedocles, see Brad Inwood, *The Poem of Empedocles* (Toronto/Buffalo/London 2001), and M. R. Wright, *Empedocles, the Extant Fragments* (London 1995).

⁵ For a useful summary of the scholarship from 1885 to 1970, after which discussion falls off sharply, see Rösler, *Reflexe* 4–6.

⁶ *Strom.* 5.14.114.4–115.1 (Aesch. fr.70 Radt); Heraclitus B32; cf. B. Gladigow, “Aischylos und Heraklit: Ein Vergleich religiöser Denkformen,” *AGPh* 44 (1962) 225–239, at 228. Gladigow deems the connection a stretch, and the current state of the corpus hardly supports the association, but Clement may have had to hand more of Aeschylus’ corpus. See also Kahn, *Art and Thought* 267–271.

⁷ S. M. Adams, “The Four Elements in the *Prometheus Vincitus*,” *CP* 28 (1933) 97–103; C. J. Herington, “A Study in the *Prometheia*,” *Phoenix* 17 (1963) 180–197, at 192–195.

⁸ Cic. *Tusc.* 2.23 (Aesch. fr.193), *Aeschylus non poeta solum, sed etiam Pythagoreus*. W. Headlam and G. Thomson, *Aeschylus: Oresteia* (Cambridge 1938) I 5–6, 52, 57, II 346–351, 371, 632; G. Thompson, *Aeschylus and Athens* (Lon-

broadly addresses several Presocratic lines of inquiry in Aeschylus. Griffith dismisses much of the discussion (especially Anglophone efforts) as misguided.⁹ Nonetheless, the *Prometheus Bound* is a complex drama with many layers of theme and significance, and no meaningful discussion of the play can ignore the full impact of Prometheus' gift of fire.¹⁰ Fire enables technology, as Prometheus himself declares (450–471, 476–506). Fire makes possible human control over nature, which in turn allows for inquiry into the nature of the physical world.¹¹ Prometheus' permanent source of fire permits a state of understanding and discernment, which he values above all other traits. Although the play remains a story from myth, it is, further, about the intellectual, rational, and scientific development of humankind,¹² and so it is useful to analyze it in such a light.

Despite modern debate over the authorship of *Prometheus Bound*, consensus is lacking,¹³ and the evidence securely bolsters

don 1946) 197–203, 229–230; Rösler, *Reflexe* 30–31. Kahn and Trépanier reject Pythagorean readings as misinterpretations of the nature of Pythagoreanism and Orphism in the west in the fifth and fourth centuries: C. H. Kahn, *Pythagoras and the Pythagoreans: A Brief History* (Indianapolis 2001) 19–22; S. Trépanier, *Empedocles: An Interpretation* (London/New York 2004) 123–126.

⁹ Rösler, *Reflexe*. Mark Griffith, “Aeschylus, Prometheus and Sicily,” in R. D. Dawe, J. Diggle, and P. E. Easterling (eds.), *Dionysiaca: Nine Studies in Greek Poetry* (Cambridge 1978) 105–139, at 109–116, discusses Pythagorean and Empedoclean echoes in the *Prometheus* and *Oresteia*.

¹⁰ Podlecki, *Prometheus Bound* 159.

¹¹ Control of fire together with agricultural advances, e.g. crop and animal domestication, lead to permanent settlements, food surpluses, and civilization: John W. Humphrey, John P. Oleson, and Andrew N. Sherwood, *Greek and Roman Technology* (London 1998) xvi. Cf. Helene P. Foley, *The Homeric Hymn to Demeter* (Princeton 1994) 97–100, 133.

¹² Gladigow, *AGPh* 44 (1962) 227.

¹³ The arguments from style, vocabulary, prosody, and other features have been explored at length: C. J. Herington, *The Author of the Prometheus Bound* (Austin 1970); Mark Griffith, *The Authenticity of 'Prometheus Bound'* (Cambridge 1977), and “The Vocabulary of *Prometheus Bound*,” *CQ* 34 (1984) 282–291. M. L. West, “The Prometheus Trilogy,” *JHS* 99 (1979) 130–148, and *Studies in Aeschylus* (Stuttgart 1990) 65, urges 430 as the *terminus ante quem* and argues for Euphorion as author. Shirley Darcus Sullivan treats the *PV*

neither argument. Nonetheless, “no ancient scholar of any eminence hesitated in attributing the *Prometheus* to Aeschylus.”¹⁴ To Herington, the late trilogies, among which he includes the *Prometheia*, “contain details which seem fairly certainly to betray an awareness (to say no more than that) of contemporary Western Greek thinking.”¹⁵ The author of *Prometheus Bound* was clearly an active participant in the burgeoning scientific and philosophical dialogue.

separately in an appendix: *Aeschylus’ Use of Psychological Terminology: Traditional and New* (London 1997) 228–234. Hugh Lloyd-Jones tentatively argues in favor of authentic Aeschylean authorship but eschews certainty: “Ancient Greek Religion and Modern Ethics,” *Silt SER.* III 20 (2002) 7–23, at 19; “Zeus, Prometheus, and Greek Ethics,” *HSCP* 101 (2003) 49–72, at 70. Podlecki, *Prometheus Bound* 200, cautiously suggests authenticity, conceding that the tragedy may not have received the author’s final revisions. T. Rosenmeyer, *The Art of Aeschylus* (Berkeley/Los Angeles 1982), esp. 22–23, 52, 106, 192, 261, who does not address the issue of authorship, seems to treat the play as authentic. J. Ferguson, *A Companion to Greek Tragedy* (Austin 1972) 111, boldly declares, “it can be confidently stated, despite some skeptics, that the *Prometheus Bound* is an authentic work of Aeschylus.” Indeed, the author’s technique may have evolved over the course of a long career, and the surviving text may reflect that evolution: S. Ireland, “Stichomythia in Aeschylus: The Dramatic Role of Syntax and Connecting Particles,” *Hermes* 102 (1974) 509–524, at 521–524. Regarding stylistic analysis and comparison with “authentic” plays of the corpus, E. Flintoff, “The Date of the *Prometheus Bound*,” *Mnemosyne* 39 (1986) 82–91, puts the matter succinctly: “there is no straightforward way in which the *PV* is like Aeschylean plays of one period such that it is not like plays of another period in other, perhaps equally important respects” (89–90). Finally, it is an extraordinary thing to take as statistical proof stylometric comparisons of seven extant tragedies from a corpus which had originally contained up to ninety plays.

¹⁴ Herington, *Author* 20; E. Flintoff, “Aristophanes and the *Prometheus Bound*,” *CQ* 33 (1983) 1–5, further argues that Aristophanes, himself not far removed in time from Aeschylus’ *akme*, regarded the play as authentic.

¹⁵ Herington, *JHS* 87 (1967) 81. Herington suggests that Aeschylus’ trips to Sicily may possibly have changed “the entire direction of his thinking” (80). The primary testimonia for Aeschylus’ visits are conveniently collected by Herington (82–85). Whether Aeschylus’ last trip was willingly undertaken or forced is a matter of contention. Most sources suggest that it was an enforced exile (e.g. *Suda* A 357 which conflates all the trips into one), but Plutarch, contradicting his own account at *Cim.* 8, says that Aeschylus embarked on his final journey to Sicily “to enjoy the delights of being abroad and to seek glory”: *De exilio* 13–14 (604E–605B); Herington 81.

Moreover, the play's date of composition and its circumstances of production are unknown. Griffith places the *Prometheus* linguistically and metrically close to the *Persae*.¹⁶ Flintoff, noting Aeschylus' Sicilian connections, suggests that Aetna's eruption of 479/6 does not necessarily set a *terminus post quem*, since this was an active volcano with nearly continuous minor eruptions.¹⁷ Aristophanes' parodies of the *Prometheus* provide, at the very least, a *terminus ante quem*.¹⁸ Some date the tragedy's composition and performance to Aeschylus' last visit to Sicily.¹⁹ Sutton, who argues for an Athenian performance on the strength of archaeology and stage-props, suggests 460–450 on the basis of stylometric comparisons with Sophocles.²⁰ Within this debate, the even more precise date 457/6 (the year before Aeschylus' death) has found favor.²¹ A mid-fifth century date places the play securely after Heraclitus (fl. 510–490) whose ideas very likely reached Athens after the Persian War; and Anaxagoras, furthermore, is generally thought to have influenced Aeschylus.²² Chronology and Aeschylus' Sicilian con-

¹⁶ Griffith, *Authenticity* 74, 80–81, 95, 98, 111–112, 129, 151, 164–165, 185, and his *Aeschylus: Prometheus Bound* (Cambridge 1983) ad 197–198, 1011.

¹⁷ Noting Epicharmus' debt to Aeschylus, Flintoff also suggests that the play may be the earliest extant Greek tragedy: *Mnemosyne* 39 (1986) 82–91. The eruption: Thuc. 3.116 with A. W. Gomme, *Historical Commentary on Thucydides* III (Oxford 1956) 431–432; C. M. Bowra, *Pindar* (Oxford 1954) 375 n.2. Flintoff also notes (89) that the *PV* is more closely related to the *Persae* in terms of style, language, and meter than to other Aeschylean plays. See also Herington, *Author* 29, 33, 70–71, and Griffith (n.16 above).

¹⁸ Flintoff, *CQ* 33 (1983) 1 n.3–4; H. T. Bekker, *Aischylos in der griechischen Komödie* (Darmstadt 1914). Especially significant passages are found at *Knights* 758, 836, 924, *Birds* 685–687, and *Clouds* 1367.

¹⁹ Herington, *Author* 113–117; Lloyd-Jones, *HSCP* 101 (2003) 54–58.

²⁰ Dana Ferrin Sutton, "The Date of *Prometheus Bound*," *GRBS* 24 (1983) 289–294. The so-called *pagos*, a rock outcropping at the side of the orchestra, likely represented the Areopagos and Agamemnon's tomb in the *Oresteia* (perhaps also the *omphalos*?). O. Taplin, *Stagecraft of Aeschylus* (Oxford 1978) 449, argues that the *pagos* had been razed by the time of the production of the *PV*; West, *JHS* 99 (1979) 135–136, suggests that the *pagos* served as Prometheus' crag.

²¹ Ferguson, *Companion* 111; Podlecki, *Prometheus Bound* 200.

²² Schofield, *Essay* 34.

nections do not militate against contact with Empedocles (fl. 460–430) or the Pythagorean Philolaus (fl. after 470).

No recent investigation of *Prometheus Bound* explores its connections with contemporary natural philosophy, despite new interpretations of both Greek philosophy and tragedy. This paper aims to fill that gap by investigating the currents of natural philosophy (especially Heraclitus, Empedocles, Anaxagoras, and the Hippocratic corpus) as they are revealed in the play.

Prometheus' gifts

Prometheus ends the soliloquy recounting his gifts to humankind with the claim *πάσαι τέχναι βροτοῖσιν ἐκ Προμηθέως* (506). These *technai* include carpentry and architecture, astronomy and the agricultural calendar, mathematics and literacy, animal husbandry and yoking, navigation, medicine, prophecy (divination), and metallurgy (450–471, 476–506): a litany of skills and specialized knowledge which privileges the human race to overcome the capricious forces of the natural world and to escape the dominance of Zeus and his newly established tyranny. Especially significant is the gift that Prometheus lists first and describes at length, in seven full and two half lines (442–450): Prometheus' greatest boon to humankind is his gift of understanding and discernment (*ἔθηκα καὶ φρενῶν ἐπιβόλους*, 444) and his gift of rational thought (*γνώμης*, 456), with which he rescued humankind from an intellectual infancy (*νηπίους*, 443). In other words, Prometheus enables the human race to understand the natural world. Through this understanding of nature and the resultant control over the forces of nature, fear of the unknown can be abolished. In the *Prometheus*, ignorance and intractability had led to the Titans' downfall (204–208). Likewise, Zeus, whose plans are “empty-headed” (*κενοφρόνων*, 762), could meet the same fate if he continues to be intellectually inflexible. Prometheus' stubbornness and hard-headedness will, ironically, lead to his own downfall, according to the charges of puerility and intractability lodged by Hermes (983, 986, 1079).

Such curiosity about the natural world, which Prometheus values so highly, fuelled the Ionian scientific revolution, especially at Miletus, which, in turn, changed the Greek intellectual

landscape. Prometheus' gifts conferred on men intellectual independence, wealth, and political stability; these are the very factors, which—in conjunction with extensive trade and colonization together with the free and open exchange of ideas—helped to spur the Ionian program in scientific natural philosophy.²³

Nascent scientific thought elevated the authority and prestige of intellectual inquiry, which consequently became a prominent theme in early natural philosophy. Like the Prometheus of *PV*, Heraclitus and Empedocles disparage those who lack discernment.²⁴ Heraclitus contrasts the few who understand the *Logos* with the many who fail or refuse to learn: even after exposure to Heraclitus' careful explanations of the *Logos*, most men do not accept that all things occur according to the *Logos*. Further, they are unable to comprehend even their own daily activities, much less the eternal and universal truths of the *Logos* (22B1).

Heraclitus' judgment of humankind is recalled in the pre-Promethean race of humankind (*PV* 447–450): pre-Promethean men were childish (νηπίους, 443), and they lacked insight and perception. Hence, they were like the majority in Heraclitus, those who ignore the rules governing the cosmos. Before Prometheus' gifts, the human race existed in a dream-like state (ὄνειράτων, 448), and they lacked understanding, just as Heraclitus' coevals could not recall what they had done as though they had been asleep. Even when awake, Heraclitus' men grasp the *Logos* only through channels of perception as though through “a kind of window” (διά τινων θυρίδων, 22A16). Prometheus had attempted to elevate humankind above that class of men whom Heraclitus reviles for their lack of discernment of the “common” truth of the constitution of the world and the scientific laws that govern it.²⁵ This truth is universally valid and universally accessible to anyone who engages in observation and eschews self-deception (B55). Scrutiny must be

²³ See most recently Daniel W. Graham, *Explaining the Cosmos* (Princeton 2006) 2–4.

²⁴ For Heraclitus, see especially DK 22B1–2; for Empedocles, 31B11.

²⁵ DK 22B17, 19, 28, 34, 56, 72; see also 1, 2, 50.

tempered with understanding (νοῦς, φρόνησις, B114), and polymathy without inquiry is futile (B40, 129). To both Heraclitus and Aeschylus' Prometheus it is percipience that validates human existence. Wisdom can be recognized by one's acquaintance with the *Logos* and by one's understanding of how all things are guided by it (B41). Heraclitus' statement on the nature of wisdom is the key to his doxology: human life is inextricably intertwined with the physical landscape; and wisdom and the quality of life depend upon an understanding of the *Logos*, the structure and arrangement of the physical environment, and the principles that in turn assure "that change does not produce disconnected, chaotic plurality."²⁶

Empedocles, likewise, emphasizes wisdom and understanding as the path to a fulfilled life (DK 31B110). More optimistically than Heraclitus, Empedocles suggests that learning increases wisdom (B17, 106). Humankind is tractable, and knowledge leads to sagacity, discernment, and satiety. Io, we read, wishes to learn the extent of her punishment, as if that information will help temper her misery (*PV* 622–623), just as, according to the chorus, the ill find comfort in knowing the full extent of their suffering, or, rather, in learning when that suffering will finally cease (698–699).

Empedocles, like Heraclitus, emphasizes both the importance and the limitations of human understanding (B2, 3). Empedocles' ode to the "power of knowledge" resembles Prometheus' litany of gifts to humankind in scope and tone (B2). Among the skills humankind will master, both Empedocles and Prometheus cite "drugs" (φάρμακων, *PV* 480), harnessing of the winds (467–468), and understanding the agricultural calendar (454–458). Whereas Prometheus' gifts are largely practical and immediately applicable, Empedocles promises sophisticated gifts that are themselves attainable through abstract means: only those who understand the elements (*rhizomata*: fire, air, earth, water) can then manipulate them.²⁷ Empedocles'

²⁶ G. S. Kirk, J. E. Raven, and M. Schofield, *The Presocratic Philosophers*² (Cambridge 1983) 203; cf. DK 22B32.

²⁷ Wright, *Empedocles* 261–262. Empedocles may have utilized here the connection between skins and weather magic (cf. *Od.* 10.19), although in

conception of the “divine,” which transcends an anthropomorphic world vision, is cast as the abstract pure force of mind (B134). Xenophanes further develops this paradigm through his model of the unmoving divine force that shakes all things by the thought of his mind and hence anticipates Anaxagoras’ *Nous*.²⁸

Anaxagoras elevates *Nous* to the supreme force of order and governance in the cosmos (DK 59B12), and thus he prefigures Plato’s Demiurge.²⁹ In the *Prometheus*, Okeanos’ mount is controlled not with a bridle but rather by thought alone (γνώμη, 286–287). The image certainly makes for good theater, but nonetheless it cannot be entirely insignificant that Okeanos controls his swift-winged bird intellectually.³⁰ By force of mind, by understanding the principles involved, Okeanos is able to manipulate his mount, just as Empedocles can envision the manipulation of the cosmos through understanding the principles underlying the *rhizomata*. As a god who actualizes a component of the physical configuration of the natural world,

Wright’s view it is possible he may have tried to build a windbreak: cf. Philostr. *V.Apol.* 8.7.8. For *pharmaka* as remedies against both disease and old age, cf. *Hymn.Hom.Apol.* 193.

²⁸ DK 21B25; for Xenophanes’ ridicule of anthropomorphic gods, B14–16.

²⁹ For Plato’s Demiurge: A. Gregory, *Plato’s Philosophy of Science* (London 2000) 27–30. To Plato, the Demiurge produces the *best* cosmos (*Ti.* 29D7–30C1), a virtue not explicit in the fragments of Anaxagoras who does, nonetheless, consider that the initial ordering is motivated by some degree of intelligence. See also Patricia Curd, *Anaxagoras of Clazomenae* (Toronto/London/Buffalo 2007) 22–25, 56–67.

³⁰ Neither Griffith, *Aeschylus*, nor Podlecki, *Prometheus Bound*, speculate on the significance of Okeanos’ mental means of controlling his four-legged winged conveyance. The argument would be stronger and the connection closer had both authors used the same word, nor are the concepts of γνώμη and νοῦς entirely correlative. Terminology, however, at this early stage was flexible: G. E. R. Lloyd, “Le pluralisme de la vie intellectuelle avant Platon,” in A. Laks and C. Louguet (eds.), *Qu’est-ce que la philosophie présocratique?* (Villeneuve d’Ascq 2002) 39. Aristotle had noted that Empedocles used a variety of terms to express the same element: *Gen.Corr.* 315a10–11; Wright, *Empedocles* 22. The point, nonetheless, is that in both contexts physical actions result from abstract thoughts.

Okeanos plays a part in the structure and maintenance of that cosmos, and so, similarly, Anaxagoras' *Nous* initiates motion and creates the sensible world (B13, 14).

In sum, contemporary philosophy underscores Prometheus' most important benefaction to humankind. Reality is to be discovered in the abstract, not in the empirical or practical. Although many of Prometheus' gifts are both empirical (unambiguous signs of the seasons, the risings and settings of the stars) and practical (carpentry, animal husbandry, medicine), he emphasizes the benefits of the mind and the importance of knowledge through inquiry. This is especially clear regarding medicine and divination. These two disciplines are both sciences of cause and effect, and each is utilized to emphasize the play's central tenet of perception acquired through inquiry and discernment.

The motif of disease, figurative and medical, is sustained in the *Prometheus*,³¹ and this imagery reflects theories of contemporary medical science—diseases have causes that can be ascertained, and those causes, once detected, can be treated with *pharmaka* to stay or reverse the course of a disease. Metaphorically, words are like *ιατροί* that can heal (*PV* 378); blind hope was the drug (*φάρμακον*, 248–250) that stayed humankind from brooding on death; Io's misery is a disease (*νόσον*, 597, 632) for which she requests of Prometheus a remedy (*φάρμακον*, 606)—her ailment has both a cause and a cure; lies and

³¹ Likewise, in *Agamemnon* (and the *Oresteia* in general) medical allusions, articulated in the Hippocratic terminology of four-humor theory, are interlaced with themes of justice and tyranny. The chorus refers to the altar fires as drugs with healing properties (*φαρμασσομένη*, *Ag.* 94); they hope that these altar fires will ward off the cankering of the sorrow eating their hearts: *ἐλπὶς ἀμύνει φροντίδ' ἄπληστον τῆς θυμοβόρου φρένα λύπης* (102–103). But *pharmaka* are both restorative and destructive: Clytemnestra's resolve was, so the chorus is convinced, strengthened by a poisonous herb nourished by the earth or a potion drawn from the sea (1407). Agamemnon suggests amputation as a cure for civil injustice (848–850), and the chorus suggests that an excess of health can lead to disease (1001–1005). Yet these “cures” disturb the balance and in their extreme measures do not bring about health. According to the Hippocratics, health is maintained through a delicate balance of various elemental and opposite properties—wet, dry, hot, cold—defining the four humors (*Nature of Man* 4).

treachery are, likewise, ethical ailments (νοσήματα, 685, 1069); and Prometheus' hatred of Zeus constitutes a disease (νόσον, 977–978). Less abstractly, Prometheus' gifts to the human race include knowledge of the means whereby humanity can protect itself against all blights (νόσοι, 479–483), but Prometheus himself is the proverbial physician (ιατρός, 473) who lacks the remedies (φαρμάκους, 475) with which to heal himself. Like human beings, Prometheus lacks either the knowledge of this specialized skill or the means to employ it.

Elemental archai in Prometheus Bound

In his opening words, Prometheus calls upon the elemental gods to witness his suffering (88–92). He invokes first air (αιθήρ), water (ποταμῶν τε πηγῶν τε κυμάτων ἀνήριθμον γέλασμα), earth (παμμήτηρ τε γῆ: mother of all, significantly his own mother), and, finally, fire metaphorically, as the all seeing-circle of the sun (πανόπτῃν κύκλον ἡλίου). He lists them from light (air) to heaviest (water, earth—even heavier than water) and then lightest (fire). Prometheus reiterates his penultimate lament (1043–1054), in his final speech wherein he likewise summons the elements in the cataclysm of his unbearable suffering (1080–1093). The helter-skelter arrangement of the elements reflects the devastation of the cataclysm which closes the play and brings Prometheus' suffering to its climax. We first note earth shaking (χθῶν σεσάλευται) and then fire coiling in flashes (ἔλικες δ' ἐκλάμπουσι στεροπῆς ζάπυροι),³² air incarnate as wind (στρόμβοι δὲ κόνιν εἰλίσσουσι, σκιρτᾶ δ' ἀνέμων πνεύματα πάντων εἰς ἄλληλα στάσιν ἀντίπνουν ἀποδεικνύμενα), and water mixed with air (ξυντετάρακται δ' αἰθήρ πόντω). These final verses recall Prometheus'

³² ἔλιξ was used to describe many things including jewelry (*Il.* 18.401), weather phenomena (Arist. *Metaph.* 998a5), plants (Theophr. *Caus.Pl.* 2.18.2, *Hist.Pl.* 3.18.6–7; Eur. *Hel.* 1331; Ar. *Frogs* 1321), hair (*Anth.Gr.* 10.19, 12.10), architectural details (Callix. *FGrHist* 627 F1.39), biological shapes (Arist. *HA* 457b11, *Part.An.* 675b20, 25, *De An.* 420a10), planetary orbits (Eudox. *Ars* 9.2), and the coils of serpents (Eur. *HF* 399). Whether the author intended a deeper meaning in his word choice is unclear. Serpents, however, are associated with earth (Gaia) and are integrally connected to cosmogony in myth: N. S. Rabinowitz, "From Force to Persuasion," *Ramus* 10 (1981) 159–191.

description of Aetna's eruption (351–365) where the elements are seen as bringing about the subjugation of Prometheus' brother Typhon.

The invocation of these primal forces as a group—earth, water, air, and fire—is unparalleled in Greek poetry. Aeschylus and the educated members of his audience were surely cognizant of the philosophical implications of this collection of images.³³ Prometheus' participation in the action of the play, such as it is, seems then to be framed by references to the four irreducible roots (*rhizomata*) which according to Empedocles account for the material universe and are connected to deities: Zeus was fire, Hera presumably was air, Nestis was water, and Aidoneus (Hades) was earth (31B6; see also 21, 23).

No doubt the passage is meant to evoke the destructive and apocalyptic force of a volcanic eruption and is, in part, informed by Empedocles or his predecessors. Two telling points, however, militate against direct Empedoclean correlation. The elemental forces in the extant *PV* are connectable not with the Empedoclean deities, but rather, transparently, with the Hesiodic deities (Ouranos, Gaia, Okeanos). Pre-Empedoclean popular belief, moreover, posited a three-element paradigm of creation.³⁴ In Hesiod, Gaia (earth), Ouranos (sky/air), and Okeanos (water) are among the deities who first came into existence, and from them was derived the physical framework of the cosmos.³⁵ Further, three (rather than four) elements

³³ Herington, *Phoenix* 17 (1963) 180, 196.

³⁴ Apart, of course, from the monist theories of the early Ionians. Griffith, in *Dionysiaca* 113. The elements are commonly earth, air, water (*Il.* 18.483, *Od.* 1.52–54, 5.293–294, *Hes. Th.* 413–414, 426–427, 847); “underworld” was occasionally added as the fourth (*Il.* 3.278, *Hes. Th.* 682, 736): Griffith 113 n.69. Herington, *Phoenix* 17 (1963) 190, claims that the early poets, including Hesiod and Aeschylus in *Eum.* 904–906, consider these “elemental” gods as the folkloric sources of agricultural prosperity, not as the theoretical scientific framework of the cosmos. However, Hesiod's *Theogony* is inspired by the Mesopotamian separation motif whereby the physical framework is constructed, literally, by drawing substance after substance from the primeval *chaos*.

³⁵ *Th.* 116–133; cf. Enuma Elish tablet 4 (A. Heidel, *The Babylonian Genesis*² [Chicago 1951] 42–43); cf. *Ar. Birds* 700–702 and *Pl. Ti.* 40D. The

dominate the extant drama.³⁶ *Aither* is not anthropomorphized in the extant play. *Aither*, however, is cited in Prometheus' framing entreaties and is personified as Ouranos at *PV* 205 as well as in the *Prometheus Unbound* (fr.193).³⁷

Early Ionian systems, moreover, posited a cosmological *arche* of one substance. Heraclitus' system, advancing beyond earlier theories, may have consisted of two material elements, earth and water, whose changes were governed by the entropy of fire. This paradigm accords with Heraclitus' view of a world dominated by opposite and binary forces held in a contentious equilibrium. Heraclitus' system incorporates both the substances (*ousiai*) and the method of transforming those substances (22B31):

πυρὸς τροπαί· πρῶτον θάλασσα, θαλάσσης δὲ τὸ μὲν ἦμισυ γῆ,
τὸ δὲ ἦμισυ πρηστήρ ... [γῆ] θάλασσα διαχέεται, καὶ μετρέεται
εἰς τὸν αὐτὸν λόγον ὁκοῖος πρόσθεν ἢν ἢ γενέσθαι γῆ.

Kahn suggests that these two sentences, despite their obliquity, may very well have been “intended to *suggest* some process of world formation or transformation, such as we find in the doxography for Anaximenes and frs. 15–16 of Anaxagoras.”³⁸ Some have interpreted πρηστήρ as a tornado or waterspout, yet the preponderance of Greek literary evidence suggests a lightning storm or “fire from heaven.”³⁹ Kahn concludes that “half-earth, half-πρηστήρ” refers to the binary forces in play

relationships vary but these three primeval deities—earth, sky, water—are fundamentally related.

³⁶ Any attempt to examine the four-element theory across the course of the trilogy and satyr play, however intriguing and tempting, would be at best speculative.

³⁷ Herington, *Phoenix* 17 (1963) 187–188, asks if the Ouranos can be identified with the *aither* of 88 and 1092. Poets made little distinction between the two terms. Further, early Greek scientific terminology was vague and imprecise, being standardized only in the Hellenistic era: G. E. R. Lloyd, “Theories and Practices in Demonstrations in Galen,” in M. Frede and G. Striker (eds.), *Rationality in Greek Thought* (Oxford 1996) 255–277, at 262.

³⁸ Kahn, *Art and Thought* 139–144, quotation at 139.

³⁹ See Kahn, *Art and Thought* 141–142, for an analysis of evidence from Hesiod, Herodotus, Aristophanes, Xenophon, and Aristotle.

after the production of sea. By means of desiccation, these binary forces transmogrify the sea into earth and vapor, and the resulting vapors in turn nourish the celestial fire. The *πρηστήρ*, then, seems to be the *dynamis* effecting the alteration, and it is highly speculative to suggest that Heraclitus considered fire (or any of its incarnations, including *πρηστήρ*) an element in the physical sense.

The “elements” and the forces prominent in the *Prometheus*—water, earth, fire—connect to Heraclitus’ doxography, and these forces are, in effect, transparently actualized in the play’s characters: Okeanos and the Okeanids represent water; Prometheus, as the son of Earth, is earth, symbolically. Fire is the catalyst which sets change in motion. Zeus, newly come to power, controls fire through Hephaestus, and he endeavors to dominate the world by means of his control over fire. That Okeanos and his daughters symbolize water is a facile observation, but earth and fire in the context of the play merit deeper scrutiny.

Earth: In Aeschylus, Prometheus is the son of Themis, who is also known as Earth, one of her many names (*PV* 18, 209–210, 874). This is a unique attribution in Greek literature. Elsewhere Prometheus is the son of the Titan Iapetos and the Okeanid Klymene,⁴⁰ and he is usually designated by his patronymic. In *PV*, Iapetos is altogether absent, and Prometheus’ father seems to be Ouranos, Gaia’s spouse.⁴¹ The matrilineal emphasis is significant, as is the maternal variance: sons of Gaia exhibit her properties and derive their power from her,⁴² and so Prometheus represents his mother’s authority and function in this dramatic context. Like Prometheus, other sons of Gaia, especially Atlas and Typhon (*PV* 348, 354), had opposed Zeus’

⁴⁰ Hes. *Th.* 507–512, cf. *Op.* 50 where Prometheus’ mother is not cited. For the association of Themis with Gaia, see H. W. Smyth, *Aeschylean Tragedy* (Berkeley 1924) 105. Hes. *Th.* 135 and Aesch. *Eum.* 2 give Gaia as the mother of Themis.

⁴¹ The text is not explicit: at 205 Ouranos is named as the father of the Titans, as in Hes. *Th.* 124–138; but Prometheus is not designated a “Titan.”

⁴² Consider, for example, Heracles’ defeat of Antaeus: Diod. 4.17, Apollod. 2.5.2, Pind. *Isthm.* 4.52–55, Lucan 4.589–655.

ascendancy, and they were made to pay the ultimate penalty. Typhon, like Prometheus, had resisted Zeus and had tried to destroy him with fire. Whereas Prometheus had stolen fire to assist humankind, Typhon “flashed from his eyes fierce-looking flame” (ἤστραπτε γοργωπὸν σέλας, 356). Consequently, Typhon, like Prometheus, was suppressed by Zeus. Fire will again be the agent of the volcanic Typhon’s fiery wrath. Typhon, a son of Earth, although he had been violently suppressed by fire (καίπερ κεραινῶ Ζηνὸς ἠνθρακωμένος, 372), will surge with the very essence of its destruction, to erupt into rivers of fire (ποταμοὶ πυρός, 368) in a fiery storm (πυροπνόου ζάλης, 371) and destroy the peaceful Sicilian landscape. So we compare Heraclitus’ πῦρ αἰείζωον, ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα (22B30).⁴³ With his thunderbolt, Zeus had created a smoldering volcano, which one day will erupt into a fire-storm. The cycle continues as Typhon, who had once possessed the strength of fire and the control over fire, then became its victim, burnt to ashes through the agency of a fiery thunderbolt. Typhon will again exert his will through the fiery force of the volcano.

Fire: This is the provenance of Hephaestus but controlled by Zeus. Incidentally, it is “luminous” Zeus (αἰθροῖου Διός, 22 B120)⁴⁴ with whom Heraclitus most likely associated fire: τὰ δὲ πάντα οἰακίζει κεραινός (B64).⁴⁵ Zeus’ agents frame the action. Kratos and the mute Bia appear at the play’s beginning; Hermes, the swaggering bully, makes his appearance in the final scene. Kratos and Hermes emphasize the authority and power of Zeus who is the force by which all things occur and according to whose will all things occur (*PV* 50, cf. Heraclitus B64). It is a genus of fire, a type which Prometheus cannot control, that acts as the agent of Prometheus’ misery at Zeus’

⁴³ Aetna, an active volcano, illustrates Heraclitus’ meaning nicely: the fire is ever-present, but it rises and recedes in measures. Not all eruptions are catastrophic.

⁴⁴ Perhaps a reference to Zeus as a weather god or an abstraction of Zeus as the celestial fire in the *aither*: Kahn, *Art and Thought* 162.

⁴⁵ This accords with Zeus’ role as arbiter of justice in the *Oresteia*.

command: the scorching of the sun with bright flame (σταθευ-
 τὸς δ' ἡλίου φοίβη φλογί, 22). Zeus' blazing wrath, moreover,
 directly leads to fiery destruction, and fire is the means by
 which he punishes those who oppose him, especially Typhon
 (351–372). Likewise, Io suffers from the agency of fire. By in-
 flaming Zeus with love (θάλπει, 590; τέθαλπται, 650) she brings
 upon herself her own destruction. Accordingly, her family is
 also threatened with annihilation by fire (πυρωπὸν, 667). The
 threat of fiery destruction, thus, remains for Prometheus, while
 Zeus shakes his lighting bolts with confidence (916–917). For
 Zeus, for Typhon, for Prometheus, fire is the *dynamis* whereby
 change occurs or is checked.

Cosmology

In five of the seven extant plays, Aeschylus inquires into the
 nature of Zeus (*physis*, the natural world) and the division be-
 tween divine properties governing the universe.⁴⁶ In the *Pro-*
metheia, the author explores the act of cosmogony, that is, the
 establishment of a new world order, Zeus' rise to power and
 Prometheus' resistance to Zeus' ascendancy.

The antagonism between the sons of Gaia-Earth (Pro-
 metheus, Atlas, Typhon) and Zeus clearly follows Hesiod's
 sequence of generational conflicts as they precede the estab-
 lishment of a new (and stable) world order. Nonetheless, in the
 light of burgeoning natural philosophy, the conflict can be seen
 as both mythical and scientific. Sons of Gaia oppose the new
 rule of Zeus. They stand in contention with Zeus over the con-
 trol of fire with which each tries to control the other, to
 establish or maintain his own authority, or to advance his own
 prerogatives. Fire imagery hardly dominates Hesiod, but it is
 significant in early Greek cosmological philosophy.

The imagery of earth and water, as affected by fire, is sus-
 tained throughout the play. Prometheus' invocations of earth,
 water, air, and fire frame the *PV*, and scattered throughout are
 instances of earth and water out of their natural and proper

⁴⁶ Only the *Septem* and *Persae* reflect a stable, static cosmos: Herington,
JHS 87 (1967) 80.

places.⁴⁷ The chorus of Okeanids (whose essence is water) are conveyed onto the stage through air, as if they are raining themselves into the scene in a winged vehicle (ὄχῳ πτερωτῶ, 135)—a surprising and theatrically effective image. Water, heavier than air, finds its natural place below air, and water is not usually conveyed through air, unless as precipitation returning to its natural place. That the image is repeated twice suggests that the author included it not simply to awe his audience with a clever use of a *mechane* but rather to evoke a deeper thematic resonance. Okeanos enters and leaves the stage by similar conveyance, on a bridled and winged bird (πτερουγωκῆ τόνδ' οἰωνόν), controlled telepathically (γνώμη, 285–287). Okeanos departs from the *orchestra* just as he had arrived: by a surprising juxtaposition of water in air on his four-legged bird (τετρασκελῆς οἰωνός, 395) who skims the tracks of air (αἰθέρος) with his wings (πτεροῖς, 394). Water (Okeanos), elevated into *aither*, actualizes the disarray of the cosmos.

The cosmic disorder continues. The first choral ode is framed by earth and water, the two elements of Heraclitus' doxography, and these elemental *ousiai* react to the pathos of the suffering of Prometheus and his brothers. The watery Okeanids emit a flood of tears in moist streams (δακρυσίστακτον ἀπ' ὄσσων ῥαδινῶν λειβομένα ῥέος, 399–401) while the earth shrieks and groans (στονόεν λέλακε χώρα, 406). The waves of ocean groan as they fall (βοᾶ δὲ πόντιος κλύδων ξυμπίτνων, στένει βυθός), and the earth roars in pity for Prometheus' suffering (κελαινὸς Ἄϊδος ὑποβρέμει μυχὸς γᾶς, παγαί θ' ἀγνορῦτων ποταμῶν στένουσιν ἄλγος οἰκτρὸν, 431–435). Io, in addition, calls upon the textures of the natural world to put an end to her suffering. She invokes the Heraclitan catalyst and two elements in turn: fire, earth, and sea (πυρὶ με φλέξον, ἢ χθονὶ κάλυψον, ἢ ποντίοις δάκεσι δὸς βοράν, 582–583). Water and earth are showcased as the media in which Io will meet her destruction, while fire serves as the

⁴⁷ According to Aristotle, each of the four fundamental materials of the sub-lunar world is endowed with a natural movement and a natural place. Fire moves up, earth moves to the center, air and water find their places between earth and fire: *Meteor.* 339a16–19.

agent of her extermination. Prometheus, finally, predicts the overthrow of the tyrant in similar elemental terms, at the hands of some yet unborn son of Zeus with the power to overthrow him. This son of Zeus will be a wrestler who will discover a flame mightier than thunder or lightning (κρείσσον' εὐρήσει φλόγα) and a sea-borne plague to shake the earth (θαλασσίαν τε γῆς τινάκτειραν νόσον, 922–924). Tradition holds that the mother of such a child could be the Nereid Thetis,⁴⁸ that is to say, a water deity, an elemental goddess.

In the final scene, the author vividly depicts the Heraclitan elements, water and earth, in cosmic disarray and he paints the violently haphazard rearrangement of the *ousiai* of the world's physical framework. Prometheus wills Zeus' punishment in a prophetic vituperation, predicting that all matter will be thrown into confusion (992–994). He foresees everything churned and turned into confusion, literally and elementally, as the cosmic *ousiai* (earth, γθονίως, and water, υφάδι) are mixed by the fiery *dynamis* (φλόξ), while the earth thunders (βροντήμασι). The author presents two startling images to underscore the violent cataclysm. Thunder normally occurs mid-air, not within the ground, and water is shown in a surprisingly altered state as a snowstorm. The emphasis has heretofore been on the fiery heat of the sun (22, 582–583, 791, 809), with which ice cannot coexist.

Hermes reiterates the punishment by invoking water, earth, fire, and a new torment, Zeus' eagle (1015–1025). Like Kratos before him, Hermes threatens Prometheus with destruction by fire. Material fire (βροντή και κεραυνία) and symbolic water (χειμών, τρικυμία ἄφυκτος) will destroy Prometheus who will literally be buried in earth (πετραία δ' ἀγκάλη). Hermes, fulfilling the will of Zeus, threatens that water and earth will be rent from their natural places by the energy, the *dynamis* of fire.

In his penultimate speech (1043–1053), Prometheus repeats his plea for cosmic destruction in language that strongly foreshadows the play's final vignette. He invokes obliteration by fire (πυρὸς ἀμφήκης βόστρυχος), the devastating forces of *aither*

⁴⁸ Apollod. 3.13.5, Hyg. 2.17.

(αἰθήρ δ' ἐρεθιζέσθω):⁴⁹ the earth is shaken to its roots (χθόνα δ' ἐκ πυθμένων αὐταῖς ῥίζαις),⁵⁰ and water surges and sends the stellar transits into turmoil (κύμα δὲ πόντου τραχεῖ ῥοθίῳ ξυγχώσειεν τῶν οὐρανίων ἄστρον διόδου). Elemental, physical earth and water are to be cleft asunder.

Prometheus' pleas and predictions of destruction are fulfilled with his final words (1080–1088, above): fire flames, air blasts, earth shakes, water (sea) is displaced into *aither* (sky). Without the other plays in the *Prometheia*, we cannot say with certainty if the author considered air and fire elemental in the same way as water and earth seem to be material roots. To Heraclitus, *aither* and fire may have been interchangeable, functioning as cosmic enzymes.⁵¹ In this final scene of the *Prometheus*, fire (ἔλικες στεροπῆς) and wind (στρόμβοι) cause the destruction and confusion (1083–1084, cf. 1044). As Okeanos and his daughters had arrived from air (286), they, the watery goddesses of the sea, are returned to and mixed with air (ξυντεάρακται δ' αἰθήρ πόντῳ, 1088), and the *Prometheus* ends with utter cosmological confusion. The upheaval of the final scene results in the complete mixture of the stuff of the earthly plane. By the trilogy's end, one assumes, the material world will be restored when Zeus and Prometheus are eventually reconciled and a political balance is achieved.⁵²

The Prometheus Bound and Heraclitus revisited

Tenets of Heraclitus' ethical and physical system overwhelmingly predominate in the *Prometheus*. In the fragments of Heraclitus and the extant corpus of Aeschylus, one notes the similarity in style and effect. Both authors employed a terse and gnomic style, resulting in an obscurity characteristic of oracular utterances; and in both authors the underlying meaning is

⁴⁹ For Heraclitus on *aither* and fire, see DK 22B114.

⁵⁰ The word choice, ῥίζαις, may be significant in that it is one of the terms used by Empedocles for the four “elements” as a group (ῥίζα, ῥίζωμα): DK 31B6, 54.

⁵¹ Kahn, *Art and Thought* 139.

⁵² Brooks Otis, *Cosmos and Tragedy: An Essay on the Meaning of Aeschylus* (Chapel Hill 1981) 102.

bolstered with word plays and etymology.⁵³ Diogenes Laertius (9.5) suggests that Heraclitus purposely wrote in an obscure style, and Heraclitus' fragments are characterized by contradictory expressions and obscure phrases (e.g., 22B60, 67).

Likewise, Aeschylus used riddling expressions.⁵⁴ Prometheus and his interlocutors are, in fact, fully conscious of Prometheus' penchant for obfuscating language as well as the power of language to hinder or to advance understanding. In response to Prometheus' new secret regarding threats to Zeus' position (*PV* 906–912), Hermes commands Prometheus not to speak enigmatically (αἰνικτηρίως, 949). Prometheus promises to speak to Io not in riddles but with simple words (οὐκ ἐμπλέκων αἰνίγματ', ἀλλ' ἀπλῶ λόγῳ, 610). He also assures the chorus of his desire that they understand clearly (σαφῶς, 817). Whereas Io charges that the oracles received by her father were nonsensical or indecipherable (ἀσήμους δυσκρίτως, 662), Prometheus asserts rather that oracles are easily comprehended when the questioner possesses understanding and knowledge (484–499). Oracles, especially the one at Delphi, speak clearly (σαφῶς, 664), and not in puzzles (καὶ οὐδὲν αἰνικτηρίως, 833). Heraclitus would agree; he affirms that the god of Delphi neither reveals nor conceals but gives a sign which the recipient interprets either incorrectly in ignorance or correctly by means of the *Logos* (B93). To Heraclitus and to other early Greek thinkers, as to our Prometheus, knowledge and truth are not fully recondite but can be grasped empirically with intellectual effort and simple common sense, if one can learn to disbelieve one's own opinions, on the basis of careful and considered observations of the natural world.⁵⁵ For Heraclitus, likewise, learning and understanding are required more than the alertness of eyes and ears. The soul must, furthermore, not be "barbarian" (B107), which is to say that one must also be able to comprehend the

⁵³ Kirk, Raven, and Schofield, *Presocratic Philosophers* 210, observe that Aeschylus' choral style (especially in the *Oresteia*) resembles Heraclitus'.

⁵⁴ Aristophanes' parody of Aeschylus' gnomic style: *Frogs* 814–825, 851–855, 927–979, 1004–1044, 1119–1168, 1264–1297, 1382–1413.

⁵⁵ B1, 2, 17, 19, 34, 35, 55, 71, 89, 101a, 107.

relevant language (i.e., Greek) to grasp the truth.⁵⁶

The very plot of the *Prometheus* reflects Heraclitan preservation of measure and balance in change as revealed in the famous river passages: ποταμοῖσι τοῖσιν αὐτοῖσιν ἐμβαίνουσιν ἕτερα καὶ ἕτερα ὕδατα ἐπιρρεῖ ... σκίδνησι καὶ ... συνάγει ... συνίσταται καὶ ἀπολείπει ... πρόσσεισι καὶ ἄπεισι (B12).⁵⁷ The surface unity is betrayed by constant change within: the river appears continuous and homogenous, but the component waters are in a ceaseless state of flux.⁵⁸ Likewise, the *Prometheus* is a static play, lacking movement and action. Tension and motion occur within the setting, around Prometheus, as he sits in the remote wilderness of Scythia while his interlocutors parade past him, flowing like a river, arriving and leaving in turn. Prometheus himself is changed by each encounter, as are his interlocutors, brought to pity or anger, to self-awareness or knowledge. Yet, at the play's end, little has changed. Prometheus remains bound to the crag, and he suffers from a new torment. Change occurs simultaneously in such a way that the balance of constituent parts remains the same: ἀπτόμενον μέτρα καὶ ἀποσβεννύμενον μέτρα (B30, cf. 67).

Thematically, philosophy and tragedy overlap. A prominent theme of the *Prometheus*—strength vs. knowledge, force and might vs. law and justice—is articulated in the interplay between Prometheus (knowledge, as his very name suggests) and the absent Zeus. Zeus is the power-usurping tyrant who rules by force, and he actualizes the strife-driven and agonistic world view of Heraclitus. In the *Prometheus*, the title character is the son of right-thinking Themis (ὀρθοβούλου, 18); for him, understanding the causes of things is centrally important. Prometheus had helped Zeus attain power, and yet he questions Zeus' fitness to rule. Zeus is insecure in his authority, and his

⁵⁶ Kahn, *Art and Thought* 107.

⁵⁷ Kahn, *Art and Thought* 91.

⁵⁸ This unity maintained by constant change would inspire the Stoic concept of *tonike kinesis* (kinetic tension) within the *pneuma* imposing cohesion and equilibrium through a simultaneous motion in opposite directions (like force field vibrations): S. Sambursky, *Physics of the Stoics* (New York 1959); F. H. Sandbach, *The Stoics* (New York 1975) 76–78.

rule is tyrannical and overbearing: he is entirely devoid of compassion for humankind, and he had threatened to destroy the human race for some reason unrevealed in the extant play. Zeus' rule finds perfect fulfillment in the personification of Kratos and Bia who were sent to enforce Prometheus' punishment (12).

This antagonism reflects the tone of Heraclitus for whom εἰδέναι χορὴ τὸν πόλεμον ἐόντα ξυνόν, καὶ δίκην ἔριν, καὶ γινόμενα πάντα κατ' ἔριν καὶ χρεώμενα (B80, cf. 83). Likewise, for Prometheus, τὸ τῆς Ἀνάγκης ἔστ' ἀδήριτον σθένος (B105). To Heraclitus, strife and war are metaphors for the equilibrium of change in the world (B30, 80).⁵⁹ If strife, that is, the action and reaction between opposed substances, were to cease, one substance would establish permanent dominance and the world as such would be destroyed. The equilibrium is maintained by an ever-cycling course of apparent change and renewal. Prometheus' eternally renewing liver is evocative of Heraclitus' sun, which is itself refreshed daily: ὁ ἥλιος ... νέος ἐφ' ἡμέρη ἔστίν (B6).⁶⁰

Aeschylus emphasizes this flux and strife in the world order. Zeus has come to power by vanquishing Kronos who had vanquished Ouranos before him (163–167). To Prometheus' lament that Necessity is stronger than Skill, the chorus inquires “who guides Necessity?” The Fates and Erinyes, Prometheus rejoins, are the guarantors of natural law (514–516). To both Aeschylus and Heraclitus, the Erinyes are the ultimate ministers of justice. In Heraclitus, the Erinyes keep even the sun in restraint: Ἥλιος οὐχ ὑπερβήσεται μέτρα· εἰ δὲ μή, Ἐρινύες μιν Δίκης ἐπίκουροι ἐξευρήσουσιν (B94). We ask of Aeschylus' Prometheus “what is meant by necessity and fate?” Surely, natural law to which all are subjected. Zeus stands as a mere cog in the machine of *physis*. Further, what does Heraclitus connote by Necessity? He had likely meant to suggest that Necessity refers to the law of nature and the state of unending flux. In the *Prometheus*, Zeus likewise connects to *physis*. Kratos

⁵⁹ Cf. Kahn, *Art and Thought* 204–209.

⁶⁰ For the myth of Prometheus' replenishing liver, see Apollod. 1.7.1–3; Hyg. 2.17; Lucian *Dial.M.* 5, *Sacr.* 6.

declares (50) that only Zeus is “free”—presumably, free from natural law. In the newly-established Olympian order, Zeus has put himself above the laws governing the physical framework of the cosmos: his mind is inflexible (ἀγναμπτον νόον, 164), and he metes out his own kind of justice (παρ’ ἑαυτῷ τὸ δίκαιον ἔχων, 186–187). Zeus represents a type of governance contrary to the ideals of justice in Heraclitus, wherein universal divine law fosters human law and all law must accord with the *Logos* which guides the cosmos (B114). In the *Prometheus*, the binary strife between Zeus and his enemies is emphasized (199–208). And yet Zeus remains above accountability.⁶¹ Although his contentious tactics will not immediately yield the desired result—the necessary knowledge to avoid his own downfall—he continues to dictate events while he stands outside the sphere of action.⁶²

Similar to Heraclitus’ cosmic cycle is the system which Empedocles posits. The material of the sensible world cycles not between physical incarnations but rather between the governing principles of Love and Strife. These forces, in turn, blend or separate the “elements” (31B17), in an eternal flux which occurs in accord with Necessity (Ἀνάγκη). Necessity, likewise, is a guiding principle in the *kosmoi* of both Prometheus and Zeus. The strength of Necessity, which guides fate, cannot be challenged (*PV* 105), and Necessity will, eventually, enable Prometheus to be freed from his bonds (514). In the play’s final scene, Prometheus again calls upon Necessity (1052) as he invokes his own cataclysm in language recalling or anticipating Empedocles’ description of the suffering of those who committed acts of hubris, bloodshed, and oath-breaking. In Empedocles, the penitent wanders for “thrice a myriad of years” (τρὶς μιν μυριάς ὥρας, B115) as the chorus notes Prometheus’ myriad pains (μυρῶν μύχθοις, *PV* 541) which he predicts will

⁶¹ Anticipating Cleanthes’ *Hymn to Zeus*: *SVF* I 537; Sandbach, *The Stoics* 110–112; A. A. Long and D. N. Sedley, *The Hellenistic Philosophers* (Cambridge 1987) I 326–327.

⁶² In the *Oresteia*, binary properties of the cosmos are emphasized: male/female, light/dark, heaven/earth, new/old: Herington, *JHS* 87 (1967) 80–81.

last until the thirteenth generation (τρίτος γε γένναν πρὸς δέκ' ἄλλαισιν γοναῖς, 774), eliciting, perhaps, the astronomical concept of the "Great Year."⁶³ Both authors emphasize a long span of time tripled. As in the *Prometheus* (1043–1053), so in Empedocles' system the elements and elemental forces effect the punishment (B115):

αἰθέριον μὲν γὰρ σφε μένος πόντονδε διώκει,
πόντος δ' ἐς χθονὸς οὐδας ἀπέπτυσσε, γαῖα δ' ἐς αὐγὰς
ἡελίου φαέθοντος, ὃ δ' αἰθέρος ἔμβαλε δῖναις.

Conclusion

Transparently, the play is about fire, which serves as the central image of Heraclitus' natural philosophy and as the connective symbol of the *Prometheus*. Fire, according to Kratos, is the prerogative of Hephaestus who unwillingly binds his kinsman. To Heraclitus, fire serves as the catalyst with which change occurs and by which the world is governed. The world-fire correlates to soul in an individual, and that soul's constituent fiery make-up determines to what degree one can understand and comprehend the cosmos (B117, 118). Likewise, in the *Prometheus*, fire is the impetus for technology and civilization and for understanding the causes of things.

Heraclitus' balance of elemental properties can be seen throughout the *Prometheus*. The description of the eruption of Aetna (365–372) manifests the central facet of Heraclitus' natural philosophy, that fire is the *dynamis* by the agency of which all things cycle. Heraclitus' binary cosmos is evoked in Prometheus' antagonism and hostility to Zeus' world order, the conflict between *Logos* and *Bia* or *Kratos*, the contrast between opposites and the equilibrium resulting from their unity, and the preeminence of fire, Heraclitus' fundamental catalyst (B90), as a reagent in the *Prometheus* and as the foundation of all human technology for Prometheus.

The author of the *Prometheus* draws broadly from early Greek natural philosophy, and this is reflected in the tone, scope, and thematic resonance of the play. Isolated phrases suggest that the playwright engaged widely with trends in philosophical

⁶³ Cf. Heraclitus 22A13.

enquiry. Although much in the play does reflect and build from Heraclitus' doxography—the prevalence of fire (and *aither*) to actuate change, the preeminence of justice, the value of *Logos* over force as the path to wisdom—*Prometheus Bound* is no apology for Heraclitan natural philosophy.⁶⁴ Prometheus' opening and closing words may derive from or anticipate Empedoclean physics, not Heraclitan, where four elements provide the substrate for the material world. Finally, despite Prometheus' Job-like suffering, unjust and public, Aeschylus' outlook differs significantly from the pessimistic Heraclitus. Prometheus gives humankind blind hopes to alleviate the pain of foreseeing doom (τυφλὰς ἐν αὐτοῖς ἐλπίδας κατώκισα, 250). He resists fully revealing Io's future lest that knowledge add to her despair (just as he had tried to reduce despair in humans by bestowing upon them τυφλὰς ἐλπίδας). Like his mother Themis-Gaia, Prometheus has the power of unerring prophecy, of foresight, and he knows that Zeus will mellow and mature. There is a limit to Prometheus' sufferings (99–100), and there is a limit to the torments besetting Io whose travails parallel Prometheus' (823): she will be returned to human form by Zeus' gentle touch (ἀταρβεῖ χειρὶ, 849). Prometheus will be freed by a descendant of Io in the thirteenth generation (774), and the elements, water and earth, will find equilibrium through the modulations of fire.⁶⁵

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⁶⁴ Gladigow, *AGPh* 44 (1962) 239.

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