

Chapter 4

The Reproductive Technology
of the Pythagoreans

Little is known about early Pythagorean sexual ethics, but several lineaments become clear from Plato and antedate him. These include determining, through geometry, the right time to reproduce, and advocating an appropriate method of copulation to ensure that the souls of offspring remain free of needless discordance. The overall purpose of these prescriptions is similar to Plato's in the *Laos*: to improve the human condition by developing a moderate breed of persons dedicated to practicing sexual and dietary austerity, with the dietary regimen serving to facilitate the spare use of sexual activity. To understand the Pythagorean sexual program, it is helpful to begin with their enigmatic geometry about the suitable time to reproduce.

THE NUPTIAL NUMBER

One of the more extraordinary ancient Greek ideas about regulating human conception is a Pythagorean theorem never taught in modern geometry. Though known as "the nuptial number," it pertains to procreation, not to marriage per se, and it dates at least from the time of Plato's *Republic*. The significance of the number here rests in the convictions that inform it, which help explain the Pythagorean ethic of harmonious and beneficial reproduction. Even though the nuptial number has had no discernible influence on ancient or modern sexual mores, it is a good overture to another aspect of Pythagorean sexual ethics that has had great influence in its transmuted Christian guise: "procreationism," the dictate that sexual relations should be practiced strictly in a temperate and deliberately reproductive way, and solely within marriage. This dictate dates at least from the time of Plato's last dialogue, the *Laos*. First, though, the nuptial number should set the tone.

The Pythagorean nuptial number in *Republic* 5.46b4–d3 is an abstruse eugenic principle that designates the most auspicious timing for producing human offspring. The timing and its geometric measure are notoriously complex,¹ but the formula has eminently clear moral and social goals. It aims to ensure that prospective parents produce offspring who have sound body and mind, experience good fortune, and help society become better through their improved moral character. Plato indicates this purpose in the *Republic*, where he applies the formula in earnest to the guardians, so that they make the best possible offspring to sustain their elite corps. "An entire geometric number is in charge of better and worse acts of reproduction. If the guardians are ignorant about this number and they bring the communal brides and grooms together at the wrong time, the children will not be well-formed (*εὐφρεῖς*) or fortunate (*εὐτυχεῖς*)" (*Rep* 5.46d1–3). The guardians are truly a golden race in the model city so long as they regulate their sexual intercourse by this formula, or so Plato maintains.

The Pythagorean nuptial number, though unknown outside of the *Republic* and the tradition of commentary on it,² contains several distinctive features that Pythagorean procreationism likewise evinces, as shown later below. First, the formulaic timing has a eugenic goal. Children who are the best in body, mind, and fortune are precisely the caliber of personnel Plato wants for ensuing generations of guardians.

Second, the nuptial number presumes the uniquely Pythagorean tenet that everything is structured by number in the form of geometrically related ratios.³ These geometric structures have either a harmony, which leads to the

1. "For mortal begettings, there is a period comprehended by the first time in which augmentations dominating and dominated when they have attained to three distances and four limits of the assimilating and the dissimulating, the waxing and the waning, render all things conversable and commensurable with one another, whereof a basal four thirds wedded to the pempad yields two harmonies at the third augmentation, the one the product of equal factors taken one hundred times, the other of equal length one way but oblong—one dimension of a hundred numbers determined by the rational diameters of the pempad lacking in each case, or of the irrational lacking two; the other dimension of a hundred cubes of the triad. And this entire geometric number is determinative of this thing, of better and inferior births." n. P. Shorey (1961). Shorey's translation better captures the numerological tenor of Plato's Greek than does Reeve's update of Grube's translation (1997). For modern attempts to figure out the mathematics of the nuptial number, see R. Waterfield, *Plato's Republic* (1993), 433–4, which is the interpretation Reeve favors. E. Ehrhardt has an alternative interpretation, "The Word of the Muses (Plato, *Rep.* 8.546)" (1986), 407–20.

2. M. Allen (*Nuptial Arithmetic: Marsilio Ficino's Commentary on the Nuptial Number in Book VIII of Plato's Republic* [1994], 5–11) explores the ancient and renaissance tradition of commentators trying to solve the conundrum.

3. *Πάρος* is constituted by three dots for the male plus two dots for the female, with the male dots alternating with the female dots. All five dots in a row ingeniously symbolize a man and a woman copulating with a view to reproduction—two pairs of feet and another dot in between for the point of coitus, which for the woman is also the point of emergence for the

good life collectively and individually, or a discordance, which leads to corruption and misfortune.

Third, the harmonious ratios pertaining to the good life are not a given but must be sought through personal and collective human action. Discordance, conversely, should be diminished or abolished where possible. Human beings should lead their lives like a symphony, not like the dissonant squeaks and squawks in the warm-up before the performance. The attainment of harmony, further, requires intense constraints on human behavior, not liberties to do as one pleases. In the nuptial number, men and women who are trying to reproduce should copulate only at the most beneficial measure of time and not whenever they wish. This distinctive project of Pythagorean sexual ethics was already in its formative stage by the time Plato wrote the *Republic* and adapted the nuptial number for his purposes. The nuptial number is consequently instructive about the rudiments of the Pythagorean project, even though it never emerged from abstruse theory to become an influential norm regulating human reproduction.

PRELIMINARIES TO PROCREATIONISM

Now that the nuptial number has yielded some core features of Pythagorean sexual ethics during Plato's *floruit*, we are in a better position to appreciate the like-minded eugenic rule of procreationism. This sexual regulation is Pythagorean in its origins and guiding tenets. It dictates that men and women who engage in sexual intercourse should do so only in marriage and for the express purpose of reproduction, and that excitement during intercourse should be kept as sedate as possible. In a more extreme version, procreationism forbids all other sexual activity as reckless and morally reprehensible, be it homoerotic, autoerotic, or heterosexual deviance from strictly temperate reproduction within marriage. Pythagorean advocates of this sexual rule considered it key to improving the moral character of future generations.

Unlike the arcane nuptial number, procreationism is no ancient and abandoned oddity. Though it began as a distinctively Pythagorean doctrine, in its more extreme form it later came to be understood as God's law in ecclesiastical Christianity. In this adapted form the sexual principle went on to be one of the most potent dictates to monitor human sexual conduct in Western culture. This chapter concerns the Greek and Roman sources on procreationism that are not part of Hellenistic Judaism or Christianity, so that we may better understand its Pythagorean provenance and motives.

This dictate is first attested as a eugenic guideline in Plato's *Laws*, and in fragments from the *Pythagorean Declarations* of Aristoxenus,⁴ which was written sometime in the latter half of the fourth century B.C.E. In addition to Plato and Aristoxenus, other proponents include the Neopythagoreans Ocellus Lucanus and Charondas, as well as Seneca and Musonius.⁵

PROCREATIONISM AS OPPOSED TO VALUING REPRODUCTION

At the outset, procreationism needs to be distinguished from other ancient norms that promote reproduction but do not limit morally permissible sexual activity to that function. The Stoics, for example, maintain that nature intends human beings to reproduce and that the shape of the genitals indicates this goal, but they also argue that friendship is the primary goal of sexual activity, quite apart from its reproductive function, as shown in the previous chapter.⁶ Similarly, most ancient Greeks and Romans thought that the primary sexual roles of a free woman ought to be those of wife and mother, yet Greek and Roman sexual mores were never confined to a strictly reproductive purpose, even within marriage.⁷ Though both Stoicism and ancient society make procreation central, neither of them limits permissible human sexual activity to reproduction, and hence they are not procreationist.⁸

4. Whether procreationism also belongs to pre-Platonic Pythagorean thought cannot be determined. Like the nuptial number, it first appears on record in Plato's writings, though it does not originate with Plato, as will be explained below. There is no compelling evidence for demonstrably pre-Platonic Pythagorean principles of human sexual conduct, though W. Burkert suggests one based on Plato's *Laws* 773e5–741a1: "One ought to beget children, for it is our duty to leave behind, for the gods, people to worship them," *Law and Science*, 171 n. 42. Burkert's argument, however, is not persuasive. He maintains that *Laws* 773e5–741a1 reflects a pre-Platonic Pythagorean teaching because its content is similar to Iamblichus *vit Pyth* 86 and to the Babylonian *Gilgamesh*, which states that human beings were created to serve the gods. This idea, however, is ancient and widespread (e.g., the First Commandment). This religious value, further, is one that numerous and diverse priestly groups in the ancient Mediterranean world would have had a practical motive to promote. Hence *Laws* 773e5–741a1 and *vit Pyth* 86 are ancient expressions of a widespread piety that the Pythagoreans likely shared, but little marks them as definitively early Pythagorean doctrine.

5. Aristoxenus was born between 375 and 360 B.C.E.; the date of his death is unknown. The Neopythagorean Charondas has a *terminus ante quem* of the mid-first century B.C.E. and the treatise of Ocellus was probably written ca. 150 B.C.E. I discuss their dates below (nn. 29 and 31). Seneca lived ca. 4 B.C.E.–65 C.E.; Musonius, ca. 30–102 C.E.

6. Cicero, *Fin* 3.62 (SVF 3.340 = LS 57F); see also Hierocles, 502.15–20.

7. See, for example, ps.-Dem. *In Naerum* 59.122; Menander, *Dyscolus* 342; *Samia* 727; R. Just, *Women in Athenian Law and Life* (1989), 135–51.

8. Athenian men, for instance, had great latitude to engage in sexual activity with younger men, concubines, prostitutes, and slaves of both sexes. Though married women chiefly served their husbands and families by producing legitimate children, in theory they too had other sexual venues, though we do not know to what extent female citizens (as opposed to noncitizens) exercised these options. Among women, there is evidence for homoeroticism and auto-

newborn. The symbolism is discussed by W. Burkert, *Law and Science in Ancient Pythagoreanism* (1972), 33–4, 49, 176–7.

Modern scholars have largely failed to see the unusual nature of the procreationist dictate precisely because they have not distinguished it from widespread ancient norms that simply favor reproduction. They have accordingly found the pre-Christian origins of procreationism in Stoic thought as a whole, in Plato's *Republic*, and even in Hellenistic morality at large.⁹ The idea that the Stoics are the originators and main proponents of this dictate is especially popular.¹⁰ Thus the distinctively Pythagorean roots and motives for procreationism remain largely overlooked. This oversight has had a

eroticism with sex toys, Plato *Symp.* 191e2–5; B. Brooten, *Love between Women*, 29–60; K. J. Dover, *Greek Homosexuality*² (1989), 102; and S. Blundell, *Women in Ancient Greece* (1995), 100–5 and figures 17–9. Moreover, D. Cohen (*Law, Sexuality, and Society: The Enforcement of Morals in Classical Athens* [1991], 133–70) suggests that Athenian wives had greater access to male lovers on the sly than was officially recognized. C. Patterson (*The Family in Greek History*, 114–32) addresses this question further in response to Cohen.

9. D. Allison ("Divorce, Celibacy," 7) voices this position well. "Largely under the influence of Stoicism, many morally serious Greeks and Romans—and therefore many Christians after them—came to believe that the primary purpose of sex was procreation. It follows that, in general, men should refrain from 'sowing seed from which they are unwilling to have offspring' (Plutarch, *Mor.* 1.44b [= *Coniugalium praecepta*]), and that, in particular, intercourse during pregnancy was against nature, without good purpose, unseemly." J. Brundage (*Law, Sex, and Christian Society*, 16) further contends that procreationism is a central teaching in Plato's political theory as a whole: "In the *Republic* and the *Laws* Plato argued that sexual relations ought to be restricted solely to procreative intercourse in marriage." W. Meeks maintains that the teaching is a widespread topos of Greek morality, "Pagan moralists habitually denounce 'passion' (*epithymia*) and 'pleasure' (*hedonē*); the wise man indulges in sex for neither, but solely in order to beget children." *The First Urban Christians: The Social World of the Apostle Paul* (1983), 101. O. Yarbrough (*Not Like the Gentiles*, 11) and R. Harder (*Oedipus Lucanus* [1926; reprint, 1966], 122) hold the same view: Procreationism is "ein sehr weit verbreiteter Topos," as Harder puts it. A. Van Geytenbeek is rather anomalous in going to the other extreme, for he overly restricts the attested range of procreationism to Musonius, Philo, and Clement, *Musonius Rufus and Greek Diatribe* (1963), 72–3. S. Goldhill takes Van Geytenbeek at his word with one minor qualification, *Foucault's Virginity: Ancient Erotic Fiction and the History of Sexuality* (1995), 135 n. 51. Like D. Allison, H. Preisker incorrectly thinks Plutarch is a strict procreationist, *Christentum und Ehe in den ersten drei Jahrhunderten: Eine Studie zur Kulturgeschichte der alten Welt* (1927; reprint, 1970), 19 n. 36. While Plutarch mentions this sentiment, he believes that marital sexual activity is justified if motivated by friendship (especially after a quarrel), and hence he is not a procreationist, *Coniugalium praecepta* 1.3d.

10. This scholarly position is *prima facie* plausible, for Seneca and Musonius, who support the dictate, are generally classified as Stoics. It does not follow, however, that procreationism is philosophically Stoic simply because two Roman Stoics happen to advocate it. In Stoic sexual ethics, as seen in the previous chapter, sexual activity is justified if practiced for the purpose of cultivating mutual friendship. Seneca and Musonius are anomalous as Stoics in supporting procreationism, as I demonstrate below. Scholars who contend that procreationism is a Stoic teaching include J. Noonan, *Contraception*², 46–9; L. Countryman, *Dirt, Greek, and Sex*, 62; P. Brown, *Body and Society*, 21; D. Biale, *Eros and the Jews* (1992), 37–8; along with D. Allison discussed above (n. 9), "Divorce, Celibacy," 7; U. Ranke-Heinemann, *Eunuchs for Heaven*, 1–6; and J. Brondéhoux, *Marriage et famille*, 136.

detrimental effect on our understanding of how the procreationist dictate in Hellenistic Judaism and patristic Christianity relates to its Greco-Roman precedents. Given the predominant scholarly view that procreationism is common currency in Hellenistic morality, its appearance in Philo and the church fathers seems simply to carry over a widespread Hellenistic sexual norm into Hellenistic Judaism and church doctrines. The carry-over comes, however, from Pythagorean thought rather than Hellenistic morality at large.¹¹ In order to see why, we must explore the procreationist dictate and its Pythagorean underpinnings.¹²

PROCREATIONISM AND ITS PYTHAGOREAN MOTIVATION

According to Aristoxenus, the Pythagoreans whom he was acquainted with favored restricting sexual activity to the maximum degree that they believed was both feasible and desirable for people to achieve.¹³ "There should be as many impediments as possible on the exercise . . . of human sexual activity (*ἀφροδίσια*), which one must practice infrequently" (*vit. Pyth.* 209–10). As

11. The hypothesis that procreationism derives from the ancient Greek medical tradition is ruled out. The procreationist position is not attested in this tradition and is incompatible with prescribing contraceptive methods, which routinely appear there, such as in *De natura et ministerio* 98 in E. Littré, ed., vol. 7, 414 (1839–1861; reprint, 1979); Galen, *De simplicium medicamentorum temperamentis ac facultatibus* 6.1.15–16 in C. G. Kühn, ed. (1821–1833; reprint, 1964), vol. 11; and Soranus, *Gynecology* 1.61–3 in *Gynaecionum libri IV* in J. Ilberg, ed. (1927). See also J. Riddle, *Contraception and Abortion from the Ancient World to the Renaissance* (1992), 16–30, 33–8, 74–6, 82–6, and H. King, *Hippocrates' Woman: Reading the Female Body in Ancient Greece* (1998), 132–56.

12. In arguing that procreationism is a distinctively Pythagorean doctrine, I am strengthening C. de Vogel's more limited observation that this sexual principle appears in some Pythagorean sources, *Pythagoras and Early Pythagoreanism: An Interpretation of Neglected Evidence on the Philosopher Pythagoras* (1966), 179–81. As de Vogel states, "moderation with respect to sexual activity (*ἀφροδίσια*) is mentioned several times"; she adds that Aristoxenus, Ocellus, and Musonius further support the idea that sexual intercourse should be directed only toward producing children in a restrained and lawful manner. She does not, however, attempt to demonstrate, as I aim to do here, that the teaching is originally Pythagorean, as opposed to a more widespread sexual norm that some Pythagoreans and Musonius happened to share.

13. The Pythagoreans whom Aristoxenus knew include: Xenophilus, with whom Aristoxenus studied prior to becoming a student of Aristotle, fr. 1 (Wehrli); Phanton, Echecrates, Polymnastus, and Diocles of Phlius. According to Diogenes Laertius, these were students of Philolaus and Eurytus, *DI.* 8.46. Aristoxenus also knew about other Pythagoreans, such as Archytas. Aristoxenus's father, Spintharus, was a friend of Archytas and told stories about him, Iamblichus, *vit. Pyth.* 198, and see too W. Burkert, *Love and Science*, 106–7 and 198. Aristoxenus somewhat tendentiously considered this group to be "the last of the Pythagoreans," for to him they were the last whose thought and ideas had merit since the time their community in Croton became fragmented, unlike the more mediated followers of the Pythagorean way of life, who were lampooned in ancient comedy, Iamblichus, *vit. Pyth.* 251, and B. L. van der Waerden, *Die Pythagoreer*, 19, 164.

the main impediment these Pythagoreans set forth the teaching that all acts of heterosexual copulation ought to be directed toward purposeful and temperate reproduction. Their directive builds by binary concept division. They separate acts of reproduction that are temperate and according to nature from those that are violently performed and contrary to nature, and they presume that this division is exhaustive. Any act of procreation is either one or the other. The temperate acts are then further divided into deliberately and inadvertently reproductive acts. The Pythagoreans permit only the former, temperate and deliberately reproductive sexual activity. "One must do away with reproductive sex acts (*γεννήσεις*) that are contrary to nature and done violently.¹⁴ Among reproductive acts that are according to nature and done temperately, one must leave as admissible only those that are for the purpose of temperate and lawful reproduction of children."¹⁵ Aristoxenus's Pythagoreans therefore believed that all acts of heterosexual copulation ought to be procreationist in purpose and method.

Aristoxenus's testimony does not allow us to definitely identify his Pythagorean sources as extreme procreationists, though they are strongly inclined in that direction. He states only that their reproductive intercourse must be temperate and deliberately procreative, but not also that this is the only kind of sexual activity allowed.¹⁶ Thus the Pythagoreans could con-

ceivably have permitted other kinds (e.g., manual, oral, intercrural, anal), so long as vaginal-penile copulation remained strictly restrained and intent upon reproduction. If any other sexual activity had been permitted, however, it would have needed rigorous justification given their desire to put "as many impediments as possible on sexual activity." Further, whatever sexual latitude might make its way around such impediments would have to be exercised within marriage, as other Pythagorean rules restrict sexual practices to the marriage bond. Followers of Pythagoras ideally should refrain from sexual activity in their early youth, marry, and maintain marital fidelity thereafter, and in general they ought to make sparing use of sexual activity throughout their lives.¹⁷ Hence even though Aristoxenus's testimony does not commit his Pythagoreans to the position that heterosexual copulation alone is permissible, they are unambiguously procreationist regarding such acts of copulation. Pythagorean sexual activity, further, is confined to marital agency, the bond of husband and wife, which in popular ancient Greek thought mainly serves the purpose of reproduction. The minds of the husbands and wives influenced by the procreationist regulation would likewise be accustomed to this marital norm and habituated to associate the marital sexual experience with copulation. Within the culturally specialized group of Pythagoreans, further, the married couples would have learned that temperate and deliberate reproduction alone is fit to be praised, prescribed, and performed within their social group. Hence this is the only type of sexual intercourse that is unambiguously without impediment in their system of social values. Pythagorean couples, as we have seen, must place "as many impediments as possible" on sexual activity. What trickles through these locks and dams on their sexual desire is either strict procreationism or a sexual norm verging closely on it.

The Pythagoreans advocate strictly temperate and purposeful reproduction for distinctively Pythagorean motives, some of which we have seen with the nuptial number. Random copulation is undesirable and discordant to the harmonic intervals of the soul being embodied. As Aristoxenus indicates, the Pythagoreans interpret conception and birth to be an act of guiding a soul into embodiment, or, more generally, an act of "leading someone into birth and existence" (*vit Pyth* 212). The guiding needs to be orderly and harmonious. If the prospective parents fail to be temperate and intent on reproduction while copulating, they are bad and even rather bestial leaders of the souls they guide into birth and existence. They reproduce "randomly and brutishly" and have children with bad moral character. Such unplanned parenting is unfit sexual behavior, due to the soul discordance

14. The term *γεννήσεις* here refers to reproductive sexual activity for two related reasons. First, the context of Iamblichus, *vit Pyth* 209–10 pertains to methods of sexual intercourse. Second, the semantic field of *γέννησις* and cognate terms primarily refers to the generative process from insemination through birth (e.g., *γεννᾶν* "to reproduce"; *γέννημα* "that which is reproduced" or "offspring, child," for which see LSJ, ad loc). Note also Philolaus F13, "the genitals (*αἰδοῖον*) are the locale of insemination and reproduction (*γεννήσιος*).² Since *vit Pyth* 209–10 pertains specifically to acts of sexual insemination and discusses their purposes and degrees of reproductive intensity, *γέννησις* here signifies "reproductive sexual activity."

15. Iamblichus, *vit Pyth* 210. This passage belongs to an extended excerpt from Aristoxenus's *Pythagorean Declarations* (*Πυθαγορικά ἀποφάσεις*) which appears in Iamblichus's treatise on the Pythagorean way of life, 209–13 (*vit Pyth*). The passage is also attested in an abbreviated form in the Hellenistic Pythagorean treatise of Ocellus, *On the Nature of the Universe*, 52–7. Section 55 in particular contains the procreationist dictate (sections 52–57 = 137.6–138.12 of H. Thiesleff's edition). Stobaeus contains a truncated version of the excerpt from the *Pythagorean Declarations*, though he omits the procreationist passage (Stobaeus 1.878.15–879.14 = fr. 39 in E. Wehrli, *Aristoxenus in Die Schule des Aristoteles: Texte und Kommentar*² [1967]). On Aristoxenus's authorship of the passage and the more complete excerpt as it appears in Iamblichus's *vit Pyth*, see R. Harder, *Ocellus Lucanus*, 134–45; E. Wehrli, *Aristoxenus*, 58; L. Deubner and U. Klein, *Iamblich: De vita pythagorica liber*² (1975), 113–15; and C. de Vogel, who collects the relevant ancient testimony in *Pythagoras and Early Pythagoreanism*, 269–70, sections 32b–c. See also W. Burkert, *Love and Science*, 101 n. 17. All my references to Aristoxenus's *Pythagorean Declarations* are to the excerpts as contained in Iamblichus, *vit Pyth*.

16. Plato in the *Laws* similarly aims to restrict reproductive sexual intercourse (*ἡ τῆς παιδογονίας ἀναγκαία*) to deliberate and temperate acts, 838e5–6. Plato does not eliminate all nonreproductive sex acts except during the citizens' time of procreative duty.

17. *vit Pyth* 47–8, 57, 210. The Pythagorean desire to restrict the exercise of the sexual appetite is a central part of their characteristic interest in controlling all physically appetitive behavior, J. Thom, *The Pythagorean Golden Verses* (1995), 127–30.

that the Pythagoreans associate with letting conception happen as it may. "Wretched offspring (*μοχθηρὰ σπέρματα*)" come from the "bad (*φάυλης*), discordant (*ἀσυμφώνου*), and disturbing blending (*ταραχώδους κρᾶσεως*) in reproduction" that fails to be temperate and purposeful (*vitt. Pyth.* 211). This concern about procreatively induced dissonance or "discordant blending" in offspring is distinctively Pythagorean, for persons and their souls must be structured as a harmony of ratios to have any capacity to become out of tune. Only Pythagoreans or Pythagorean-influenced writers conceptualize the soul, human body, and other entities in terms of ratios yielding either harmony or degrees of disharmony.¹⁸ This idea was formulated at least a generation before Plato, moreover, for the Pythagorean Philolaus maintains that the soul has such a structure¹⁹ and is harmonious

18. In Pythagorean thought, souls and all other physical entities are structured by number, which means in part that they are structured by numeric ratios. W. Burkert, *Law and Science*, 40, and 28–32 *passim*, with the evidence from Aristotle evaluated therein. L. Zhmud attempts to restate and elaborate the theses of Frank and Cherniss (that Pythagorean number theory is an invention of Aristotle and Plato's successors in the Academy), but he does not effectively challenge Burkert's refutation of this argument in *Law and Science*, 38 n. 50, 46 n. 97, and 86 n. 16; cf. L. Zhmud, *Wissenschaft, Philosophie, und Religion im frühen Pythagoreismus* (1997), 261–79, with Frank and Cherniss cited at 269–70 nn. 31, 34. C. Huffman (*Philolaus of Croton: Pythagorean and Presocratic* [1993], 64–74) has an interesting argument that Philolaus uses numeric ratios for epistemological purposes and thereby attempts to meet Parmenides' requirement for being and genuine knowledge. This argument, however, in no way precludes Philolaus from thinking that all things, such as soul, actually have numbers as their structuring principle, and he is quite emphatic that they do. E. J. Huffman (55–6) overly downplays Philolaus's point about things having number in an effort to free him from seeming a number mystic, as P. Kingsley notes (1991), 94–6. W. K. C. Guthrie's discussion of Pythagorean number theory and cosmology remains worthwhile, *History of Greek Philosophy*, vol. 1 (1962), 233–306.

19. Philolaus is committed to the position that the soul has harmony as its ordering principle, by which he means that the soul is ordered by harmonic intervals in numeric ratios. In fragments from the opening of his lost book on nature, he claims that "nature in the cosmos has been harmoniously structured (*ἀρμόχθη*) from [two unlike principles, *οὐχ ὁμοίαι*, F6] unlimiteds and limiters—both the entire cosmos and all things in the cosmos," F1. Compare F6, where he reaffirms and expands upon this point, and note also the stress on *συναρμόχθη* and *ἀρμοσθέν* in F2 and F7. Soul is one such entity, for Philolaus thinks that what animates human beings is soul (*ψυχῇ*) comprised of some substance or mixture of substances located in the heart, F13. The precise nature of soul substance is unclear. Thus by *ἀρμόχθη* in F1, Philolaus means that soul, like all else in the world, "is necessarily encased (*συγκέκλεισται*) by harmony" F6, and hence that it has harmony. Unfortunately, no extant fragments explicate precisely how he conceptualized the embodied soul as an attunement in relation to the body. Still, we get a general idea from the genuine fragments. As Philolaus states, "harmony" (*ἀρμονία*) has ordered the cosmos, and all things in it, through a variety of arrangements on his two principles (*ἀρχαί*) the "limiters and unlimiteds," F6. Soul in an ordered state (of incessantly vibrating notes or of air, perhaps, cf. Aristotle, *Anim.* 404a16) would be one such arrangement. By *ἀρμονία*, further, Philolaus is referring to numeric ratios, which he maintains "knowable things have" and must have in order to be knowable, F6. These numeric ratios, finally, are concordant intervals, which Philolaus explicates in light of music theory, F6a. Therefore, accord-

ing to Philolaus the soul is structured by numeric ratios as harmonic intervals, at least in its ideal state. Consequently Macrobius is right to attribute the view that the soul is harmony to Philolaus (A23), despite Huffman's doubts (326–8), even though Macrobius would be more precise to say that the soul *has* a harmony according to Philolaus, rather than that it *is* a harmony. The latter claim can and has led to two mistaken views of Philolaus's thought: First, the soul is reducible to the numeric ratios that lend it structure. Second, the soul is nothing other than an epiphenomenal attunement of the body itself—the mortal song of the body that necessarily dies out when a person dies. For the fragments of Philolaus and testimony cited above, see C. Huffman, *Philolaus of Croton*, 37–77, 93, 101, 123, 145–6, 226–7, 307, 323–6, 328–32.

20. Philolaus's notion of the soul as a harmonic structure of quantifiable ratios is distinct from the position that the soul is nothing other than an epiphenomenon of the mortal harmony or balance of substances that make up the human body. The latter position is the view Simmias offers in *Phaedo* 86d4 (viz., that the soul is a necessarily mortal "mixture of bodily substances"). For Philolaus the soul's harmony is not merely a bodily epiphenomenon, for this would deny the soul any substantiality and harmonic structure of its own, which is contrary to Philolaus's soul theory, F13. Hence his conception of the soul as harmony is not reflected in Simmias's argument in the *Phaedo*. The provenance of Simmias's argument (*Phaedo* 85e1–86d4) is uncertain. It may come from an ancient Greek medical milieu, W. Burkert, *Law and Science*, 272, or it may be Plato's own idea to test the Pythagoreans' position that the soul has harmony and is immortal. For the plausible view that Simmias's argument is Plato's invention, see H. B. Gottschalk, "Soul as Harmonia" (1971), 179–93. Thus Guthrie's discussion about Philolaus's attribution of harmonic intervals to the soul itself is on the right track, *History of Greek Philosophy*, vol. 1, 212–29 and 306–19.

21. DL 8.36 = Xenophanes DK 21B7. The transmigration of immortal souls (which presupposes soul-body dualism) is "the one most certain fact in the history of early Pythagoreanism," W. Burkert, *Law and Science*, 120–3, esp. 120 n. 1. C. Huffman (*Philolaus of Croton*, 330–2) expresses reasonable doubt whether the Pythagoreans' belief in soul transmigration led them to have a defensible philosophical account of soul before Plato's day. Still, he takes doubt to an extreme to question whether the Pythagoreans, Philolaus included, believed in the soul's immortality. First, the Pythagorean belief in the soul's continual cycle of transmigration presupposes the soul's immortality. Second, according to Aristotle, Alcmaeon of Croton supported the soul's immortality on the grounds that soul is "always in motion" (*ἀεὶ κινουμένη*) and that it is divine or god-like, 405a30–b1, see too W. Burkert, *Law and Science*, 296 n. 95–97. The Pythagoreans according to Aristotle similarly believed that soul, which is comprised at least partly of notes or the air that moves them, is "manifestly in constant motion" (*σπερὶ γὰρ φαίνεται κινουμένη*). This characteristic of incessant motion likely indicates that they too, like Alcmaeon, explicitly maintained that the soul is immortal by virtue of being in constant motion. Further, it is a prominent part of the Pythagorean tradition from Plato onward that the soul is divine or godlike, which is the other characteristic Alcmaeon of Croton ascribes to the immortal soul. On this tradition, see, e. g., Porphyry, *Pyth.* 19 and B. L. van der Waerden, *Die Pythagoreer*, 116–22. Alcmaeon was acquainted with Pythagoreans in Croton and may have

thought insofar as the motives for promoting this reproductive practice are Pythagorean. Aristoxenus's testimony that this sexual regulation has a Pythagorean provenance consequently proves reliable for reasons internal to Pythagorean thought, and not for reasons depending more precariously on the reliability of Aristoxenus alone as a witness. Hence the regulation did not originate with Plato in the *Laus*, even though he is the first on written record to use it. Its proponents were either Pythagoreans themselves, such as the persons Aristoxenus knew, or, like Plato in the *Laus*, deeply influenced by the ideas of this sect.²²

A passage in Plato's *Timaeus* helps further elucidate why the Pythagoreans think that willfully discordant procreation or "discordant blending" is harmful to human well-being and character. Acts of reproduction, Plato observes, bind an immortal soul into a mortal body in a manner inherently disturbing to the soul.²³ The soul is a structure of harmonic intervals, or "cycles" (*περίοδοι*), as Plato describes them, and the binding throws the embodied soul's intervals into some disharmony (*Tim* 43c7–d2). This discordance is partly unavoidable; it is what causes infants and toddlers to be helpless, irrational, and inarticulate (*Tim* 44a7–c4). However, if the disharmony is brought about through reproductive activity that is carelessly unrestrained, inadvertent, or both, then the harmful effects of embodiment on the soul linger even after the children mature. In such persons, the soul remains out of tune and thereby harms their ability to reason and act responsibly. Prospective parents consequently should rise above their deleterious ignorance and stop making wild love as though nothing were at stake for the soul and its delicate balance of harmonic intervals. Instead they must strive to be very restrained and deliberate so as to guide the soul into embodiment with the least possible turbulence. In this way they treat each soul they embody as the genuine Stradivarius that it is.

been one himself. By L. Zmnud's criterion Alcmaeon was Pythagorean because he is named as one in Iamblichus's doxographical list at *vit Pyth* 267 (*Pythagoreismos*, 67–8, cf. *vit Pyth* 267), by C. Huffman's criterion of evaluating what is known about Alcmaeon's ideas, he was not a Pythagorean (*Philolaus of Croton*, 11), and see further W. Burkert, *Love and Science*, 289 n. 57.

22. Aristoxenus's testimony about procreationism does not depend on Plato's *Laus* for at least three reasons. First, there are no verbal echoes between the phraseology of Aristoxenus and Plato on procreationism. Second, Aristoxenus knew numerous Pythagoreans and had their oral traditions on which to draw for his understanding of Pythagorean sexual principles, *DE* 8.46. Third, there is one major difference between Aristoxenus's explanation of the procreationist rule and Plato's adaptation of procreationism in his hypothetical city of Magnesia, which I demonstrate below. The second point about oral Pythagorean traditions has considerable weight given the substantive differences between the *Pythagorean Declarations* and the *Laus* on procreationism and the absence of common phraseology.

23. *Tim* 42e5–44d2. This passage gives an account of birth and of early childhood even though Plato presents the account as a creation tale that happened once upon a time in the past. E. Cornford, *Plato's Cosmology* (1937; reprint, 1957), 147.

The Pythagorean supporters of temperate and deliberate reproduction give this sexual norm first priority on an agenda of social and familial reform. "The single greatest cause of wickedness and corruption," they maintain, arises from the common practice of adults producing future generations in flagrant disregard for the need to be restrained and purposeful about their reproductive task (*vit Pyth* 213). This is an urgent problem, for the vast majority of parents-to-be make love in a carefree and careless way (*vit Pyth* 210, 213), and in so doing allow the souls of their offspring to crash-land into embodiment. The parents have only themselves to blame for the results: children who are roughly thrown together and grow to be depraved adults. If only the parents acted as good leaders of souls into embodiment, as the Pythagoreans urge them to do, then children would be conceived properly. The parents would see the immediate reward for their efforts, sons and daughters at the head of the human class. Future society would also benefit greatly. The rapid recovery of psychic harmony in the offspring means that the community as a whole would improve by becoming sound in mind, body, and character. This desirable social change remains impossible, however, unless prospective parents cease reproducing with reckless abandon and become restrained technicians in the marital bed. Thus the Pythagoreans have a compelling reason to promote the procreationist dictate as the standard sexual norm for husbands and wives to religiously follow.

The Pythagoreans were already engaged in related measures to reform sexual mores toward procreationism, at least within their own groups. They offered two ways to encourage people to comply with their procreationist reform. First, a strict diet. Uncontrolled consumption of food and drink overstimulates the sexual appetite and leads it to transgress the limit of temperate and deliberate reproduction. Thus dietary restrictions are in order (*vit Pyth* 211). Second, people should take pride in being above animals on the Pythagorean scale of nature. They must refrain from blurring the difference by copulating as animals do, brutishly and randomly, oblivious to the unique human art of reproduction (*vit Pyth* 213). Therefore, people need to restrict their diet and to mind their assigned place in nature in order to attain the good society for future generations. They must be ever temperate, ever restrained, and never like wild animals—nowhere more so than when they guide souls into embodiment and thereby give future generations a greater eugenic edge.

Plato in the *Laus*, as shown in chapter two, likewise requires the citizens of Magnesia to behave in a strictly procreationist way during their years of reproductive duty. The motivation for his eugenic regimen is similarly Pythagorean. First, Plato blames intemperate sexual activity for bringing about the greatest harm to people individually and to entire cities (*Laus* 835c2–8, 836a6–b2). Unmanaged sexual activity gains such an alarming status in the *Laus* not simply because of the rampant consuming passions

that Plato associates with the unrestrained sexual appetite in his dialogues as a whole. Rather, in his last dialogue, and there only, he is concerned about the presumed deleterious effects of uncontrolled sexual relations on the children thereby conceived and produced. Transgressing the temperate and deliberately reproductive purpose of sex is a kind of gross violence that harms the formation of the offspring, leading them to be "uneven, untrustworthy, and crooked in moral character" as well as in body (*Laus* 775d1–e2). The Pythagoreans held the same position, as seen above. In order to do away with "the single greatest cause of wickedness and corruption" in society, they too would like to put an end to the conventional laissez-faire style of reproduction and to replace it with purposive temperance (*vit Pyth* 213). Similarly, in the *Laus*, the citizens must marry and engage only in temperate and deliberately reproductive sexual relations when they enter their prime of life (*Laus* 783d8–e4). Plato, however, is distinctive in imposing a strict time limit on the procreationist restriction. In his hypothetical city the rule is in force generally no more than ten years on average per couple, for it applies only as long as the couples have not yet produced the requisite number of children (*Laus* 783e4–7, 784b1–3). Only during this period is Plato draconian about enforcing the procreationist norm.²⁴ After the citizens' time of reproductive duty, Plato grants and expects them to exercise greater latitude in their sexual behavior. In the *Laus*, the citizens will still be driven to serve Aphrodite through their sexual appetite on a regular basis until advanced old age, but they should do so temperately.²⁵ Plato permits these sexual relations and regards them as honorable, so long as the citizens do not reproduce or become outrageously licentious, such as by making a public show of it. Thus Plato in the *Laus* is very selective about the time frame in which he thinks Pythagorean procreationism is an advisable rule to follow.²⁶ He is extremely stern, though, during the time procreationism applies, because so much is at stake for the harmonious soul, society, and human race.

Several related Pythagorean measures to bolster procreationism also appear in Plato's *Laus*. Plato makes the same correlation as the Pythagoreans between excessive eating and uninhibited sexual behavior. The former fuels the latter. Plato accordingly advocates dietary restrictions as well as an exercise regimen in order to "divert the nourishment" elsewhere that otherwise makes the sexual appetite hyperactive (*Laus* 841a6–8). He likewise

concurs with the Pythagorean idea that human beings are above animals on the Pythagorean scale of nature and ought to stay there, as he makes very clear at the end of the *Timaeus*.²⁷ In the *Laus*, further, people "should be better than animals" in their sexual conduct, and they are better provided that they marry and follow the procreationist regimen. Otherwise they reproduce without purposefulness and restraint, in the style "of a four-footed animal," as Plato describes it in the *Phaedrus*.²⁸ Plato in the *Laus* consequently shares the Pythagorean conviction that society must undergo rigorous reform in support of procreationist eugenics: Eat food in limited amounts so as to avoid barnyard styles of copulation. Honor your standing as rational biped by reproducing strictly in the avant-garde style formulated in Pythagorean thought. Plato takes the additional step, however, of expecting his citizens to be sexually active without reproducing after they finish their procreationist duty. Nonetheless, the *Laus* makes the first known attempt to institute the Pythagorean craft of procreationism, albeit in an as yet hypothetical society and not as a lifelong measure.

CHARONDAS

The *Preambles to the Laus*, a Hellenistic Pythagorean treatise under the pseudonym "Charondas," advocates procreationism in an unambiguously strict sense. This work is independent of Aristoxenus and Plato for its source material and was in circulation prior to the mid-first century B.C.E. Precisely when the treatise was written, however, remains unclear.²⁹

Charondas assumes that each man has or should have a wife and that the married couple should reproduce. To this extent his thought is consistent with mainstream Hellenistic sexual morality, but then he parts ways. He stipulates in no uncertain terms that the man must climax with his penis located nowhere else besides in his wife's vagina and for the purpose of re-

27. The scale of nature begins with men at the top, who are followed in descending order by women, birds, four-footed animals, belly-slithering animals, and underwater animals. The further down the type of animal, the less able the animal is to exercise appetitive restraint and the more remote are their embodied souls from being able to reason philosophically so as to recollect the soul's immortal nature, *Tim* 90e6–92c3.

28. 250e4–5. Nonprocreationist human reproduction is animal behavior from a Pythagorean perspective in part because it corrupts the embodied soul, and this corruption in turn causes the damaged soul to transmigrate later into one or another of the animal bodies, as mentioned in the preceding note, *Tim* 90e6–92c3.

29. For the pseudonymous text of Charondas, I cite the page and line numbers of H. Thesleff's edition, *The Pythagorean Texts of the Hellenistic Period* (1965). This work is earlier than the mid-first century B.C.E. because Cicero (106–43 B.C.E.) mentions it, *Leg* 2.5.11, and Diodorus Siculus (fl. 60–21 B.C.E.) also knew and used a portion of the same or a similar pseudonymous treatise, 12.11.3–19.2.

24. *Laus* 837e9–38e1, 783a1–c1, 631d6–32a2.

25. *Laus* 841a9–b2, 841b4–5, 784e5–85a1.

26. In Aristoxenus's testimony about this sexual rule at *vit Pyth* 209–10, we see nothing of this major modification of the procreationist principle that Plato makes. This is the substantive difference between the procreationism of Plato and Aristoxenus that I adumbrated in an above note (n. 22).

production alone. Any other purpose is wild, licentious, and forbidden. "Each man must love his legitimate wife and procreate from her. Into nothing else should he ejaculate (προιέσθω) the seed of his children (τέκνων τῶν αὐτοῦ σποράν). He must not waste or abuse that which is honorable in nature and custom. Nature made seed (σποράν) for the sake producing children (τεκνοποιίας), not licentiousness (ἀκολασίας)" (62.30–33). Here Charondas thinks in a Pythagorean manner by the exclusive disjunction he makes between ejaculating for procreation (τεκνοποιία) or for licentiousness (ἀκολασία). Unless a man ejaculates into his wife to reproduce, then he does so for licentious reasons, and such license is absolutely forbidden. Other justifications for sexual activity are left out of consideration, such as the Stoic goal of mutual friendship. Charondas thus goes by the strict letter of his procreationist law, and he would enforce this rule on a lifelong basis.

Charondas's unconditional procreationism is far more inflexible than Plato's use of the regulation in the *Laws*. Plato finds lifelong adherence to this rule both impractical and harmful. Aphrodite's power is too strong, so the citizens in reproductive retirement should honor her in a moderate and guardedly nonreproductive manner. Charondas disallows such permissiveness. He brings the Pythagorean goal of impeding human sexual activity toward its furthest possible limit while still allowing for the reproduction of the species. Only deliberately procreative sex acts in marriage remain permissible.

As Charondas and Plato clearly show, a reverence for semen goes together with the procreationist dictate. Charondas writes the procreationist ideal into the very words he uses to refer to the substance. Semen is "the seed of a man's children" and as such must be used strictly to produce them (62.31). Plato in the *Laws* likewise refers to semen as "procreative fluid" (γόνιμον) and contends that careless ejaculation is wrong for reasons that are apparent in the very name of the substance. Semen is strictly reproductive fluid during the time a man must father his required number of children (*Laws* 838c4–39a6). This solemnity about semen comes to the fore particularly when Plato and Charondas deplore its misdirected use. A man who misdirects his semen "kills" and "wastes" both "his children" and even the entire "human race" (62.30–33, *Laws* 837c7–8). Semen is one of the vehicles through which immortal souls come into embodiment, so to destroy this liquid is, in effect, to destroy a human soul. Charondas adheres to this viewpoint unconditionally. A man is duty bound to sow this sacred right-to-life substance only into his wife.³⁰ Plato's *Laws* likewise maintains that a

man should not destroy semen, but only during his time of reproductive duty. Thereafter he should waste it in accordance with his undeniable sexual needs. As Plato sees it, let the vital substance die once it has reached its expiration date, rather than use it for producing deficient offspring.

OCELLUS

On the Nature of the Universe, which is attributed to "Ocellus," likewise supports the strictly procreationist position. This Hellenistic Pythagorean treatise, which dates to around 150 B.C.E.,³¹ partly cites Aristoxenus's *Pythagorean Declarations* for its advocacy of this sexual regulation. Ocellus quotes Aristoxenus at length in sections 52–57. He also supports procreationism in his own words in sections 44–46.³² I discuss Ocellus's own argument unless otherwise indicated.

Ocellus presumes the key Pythagorean tenet that sexual relations are motivated either for the production of children or for pleasure. The exclusive disjunction he posits is similar to the one that Charondas makes between reproduction or licentiousness. Ocellus likewise firmly maintains that only procreation within marriage is an acceptable purpose for human sexual activity. All the rest is hedonistic and unacceptable. "We do not engage in sexual relations (πρόσιμεν) for pleasure (ἡδονῆς) but for the procreation (γενέσεως) of children" (135.11–13). This regulation reflects the ordained purpose of the Pythagorean demiurge. This creator god shaped human beings and their sexuality deliberately and only so that they would participate in immortality through reproduction. Hence procreationist relations alone gain this god's approval (135.16–19). Ocellus also quotes and very much favors the argument from Aristoxenus, which states that of all possible acts of reproduction, only temperate and deliberately procreative ones within marriage are allowed (137.21–25). What Ocellus draws from this argument, however, is the hard-line position advocated by Charondas.

Stoic Cosmology, 70–1. The same sort of idea implicitly informs Pythagorean procreationism given the strong concern to prevent men from killing their semen, as it were, by ejaculating in an expressly antireproductive manner.

31. The Ocellus in whose name the pseudonymous treatise is written was a Pythagorean, for which see Iamblichus, *vit Pyth* 267 and DK 1.440–1. The time by which *On the Nature of the Universe* definitely was written is the mid-first century B.C.E., but the date 150 B.C.E. is the likely approximate date of the treatise, F. Sandbach, *Aristotle and the Stoics* (1985), 63–4. See further W. Burkert, "Zur geistesgeschichtlichen Einordnung einiger Pseudopythagorica" (1972), 46; H. Thesleff, "On the Problem of the Doric Pseudo-Pythagorica: An Alternative Theory of Date and Purpose" (1972), 73; and R. Beutler, "Okellos" (1937), 2361–80. References to Ocellus are, as with Charondas, to Thesleff's edition.

32. Sections 44–46 are at Thesleff 135.11–136.9 and sections 52–57 from Aristoxenus at 137.6–138.12.

30. For these Pythagorean-based reasons, Clement of Alexandria similarly maintains that a man who ejaculates inadvertently engages in involuntary manslaughter, while the man who willfully does so is in effect a murderer, *Strom* 2.61.1–2. The idea that semen is a liquid component of soul appears in Aristotle, *Gen anim* 2.1.735a4–9, 2.3.737a16–18, and see D. Hahn,

Unless sexual activity is procreationist within marriage, then it is hedonistic—licentious, Charondas would say—and as such forbidden. Therefore, Ocellus eulists Aristoxenus's *Pythagorean Declarations* in support of absolute procreationism. We cannot be so sure that the same held true for the Pythagoreans with whom Aristoxenus was acquainted in the fourth century B.C.E., though they were very close to this position.

Ocellus, like Aristoxenus and Plato, reinforces the procreationist dictate by appealing to the Pythagorean scale of nature and ideas about excess nutrition. People who engage in unrestrained and nondeliberate procreative acts behave like irrational animals (136.1–6). To remedy such brutish conduct he prescribes just what his Pythagorean predecessors do, a dietary regimen that leaves no scraps on which the inner sexual animal may feed (137.26–138.3). Ocellus thus reaffirms the earlier Pythagorean view that excessive nutriment feeds the sexual appetite and brings us to make love below our zoological station—as though we were brutes in rut rather than master artisans of the right reproductive decorum.

Ocellus similarly endorses the older Pythagorean argument that procreationism chiefly serves the interest of the children. Offspring who are produced in anything other than a strictly purposeful way are "abject, ill-omened, and abominable (*μοχθηροί, κακοδαίμονες, βδελυροί*) in the eyes of the gods, demi-gods (*δαιμόνων*), people, households, and cities" (136.1–11). Procreationist sex acts avert this undesirable outcome and help set morals right by the gods, in due accordance with Pythagorean piety.³³ Aristoxenus and Plato likewise maintain that strictly temperate and purposeful reproduction alone prevents offspring from having excessively discordant souls at birth. Ocellus, however, gives this position an astral twist. The souls of children who are produced inadvertently, intemperately, or both are born under a bad sign. They have been down since they began to crawl, afflicted with the life-long curse of having been embodied in a sexually abominable way.

As shown by the treatises of Ocellus and Charondas, the older Pythagorean doctrine of procreationism gains a favorable reception during the Neopythagorean revival of the later Hellenistic and early Roman period. The new version is not nearly as nuanced as those of Aristoxenus and Plato. First, it stresses the need for reproductive purpose yet loses sight of the point that the copulation also needs to be temperate. Temperance is needed to give the soul the smoothest possible landing during embodiment. Second, Charondas and Ocellus allow nothing other than strictly purposeful repro-

duction within marriage, even for persons beyond their prime. Hence it is unlikely that they had anywhere near the clear grasp Plato reveals about the dualistic eugenics that originally motivated the Pythagoreans to formulate this regulation. One who grasps this reproductive principle would recognize, as Plato does, that it is problematic to advocate (as Charondas and Ocellus do) that for their entire lives married couples should make love only to reproduce. One must further specify how the couples should behave sexually once they are too old to produce offspring of first-rate quality. Despite its inflexibility, procreationism in its Neopythagorean form became popular enough to extend beyond its Pythagorean origins to thinkers known more as Stoics, as I will now show.

SENECA

Seneca advocates procreationism in its Neopythagorean version. Like Ocellus and Charondas, and unlike any Stoic other than Musonius, he presumes an exclusive disjunction between human sexual activity "for the purpose of pleasure" (*voluptatis causa*) or "for the purpose of reproduction" (*proptagandi generis causa*). Only purposeful reproduction is justifiable, and marriage is the only institution in which it may occur. Seneca's strict marital standard is unequivocal. He finds it intolerable for a man to have any sexual partner other than a wife, especially female partners, and he inveighs against adultery in particular.³⁴ If Seneca had his preference, he would like to see the Neopythagorean standard of sexual austerity become the predominant norm.

Seneca advocates unconditional procreationism out of concern more for the sexual agents themselves than for the offspring. He considers sexual desire for pleasure, *libido*, to be like a fire ready to rage out of control. He defines *libido* as a "destructive force (*exitium*) insidiously fixed in the innards." This force fulfills its violent tendency to harm sexual agents unless it remains within the confines of the procreationist limit. Like Plato, Seneca thinks that unregulated sexual desire spreads like wildfire to other kinds of all-consuming lust, or *cupiditas*.³⁵ Unlike Plato, however, he is convinced

34. *Ep* 94.26, *Inv* 2.28.7. Seneca consequently criticizes Roman practices of adultery and unchaste Roman women, *Ben* 1.9.3–5, *Helv* 16.3.

35. *Helv* 13.3. This passage from Seneca is as follows: *Si cogitas libidinem non voluptatis causa homini datum, sed proptagandi generis, quem non violaverit hoc secretum et infixum visceribus ipsis exitium, omnis alia cupiditas intactum praeteribit*. Seneca's meaning is best interpreted as follows: "If one thinks that sexual lust is given to a man not for the purpose of pleasure but for propagating the human race, then all other lust will pass him by unscathed, since the destructive force insidiously fixed in the innards does not violently harm him." Such a man goes unscathed because he restricts his *libido* to its procreationist task and thereby prevents this *exitium* from giving rise to other rampant kinds of *cupiditas*. Plato likewise connects unrestrained sexual desire

33. For the centrality of Apollo in the polytheistic piety of the Pythagoreans, see L. Bruit-Zaidman, "La piété pythagoricienne et l'Apollon de Délos" (1993), 261–9; for theurgy, P. Kingsley, *Ancient Philosophy, Mystery, and Magic: Empedocles and Pythagorean Tradition* (1995), 292–306; and for the gods worshipped by Pythagoreans, W. Burkert, *Love and Science*, 112–14, 141.

that the only way to stop this calamity is to act on one's sexual desire only for reproduction within marriage. Therefore Seneca's sexual ethic is consonant with that of Charondas and Ocellus and more restrictive than Plato's use of procreationism in the *Laos*.

Seneca's procreationist doctrine is contrary to Stoic ethics even though he appropriates Stoic phrasing to describe it. The "wise person" (*sapiens*) who for Seneca is a traditionally married man, ought to make love to his wife "with reason" (*iudicio*) and not "with passion" (*affectu*).³⁶ *Sapiens* is the Latin equivalent of the Stoic term *σοφός* and the contrast Seneca makes between acting with right reason or with passion is a Stoic one. Seneca's wise man, however, makes love to his wife "with reason" only if he engages in strictly reproductive sexual activity with her. Otherwise he would be making love for pleasure and hence "with passion." The later Stoics, by contrast, argue that sexual activity is justified if it is done to promote reciprocal affection within marriage. Seneca also rejects the core Stoic principle that love of beauty is an ethical stimulus of mutually friendly sexual relations, be it in marriage or communally. He regards such attraction to beauty as an egregious passion. "Love of beauty (*amor formae*) is the obliteration of reason, one step from insanity."³⁷ Seneca thus allows his strictly procreationist wise man only to have reproductive impulses with his wife, not to be sexually aroused by her beauty or to make love with her for friendship. Consequently, even though Seneca tends to be classed as a Stoic in many respects, he is anti-Stoic in his sexual ethics. It is utterly foreign to Stoicism to contend, as Seneca does, that one must do away with the experience of erotic love except for the reproductive urge within marriage.³⁸

Seneca is indebted to Neopythagoreanism for his procreationist dictate. He probably became aware of the rule through his involvement with the Neopythagorean revival in Rome.³⁹ The treatises of Ocellus and Charondas were in circulation in Rome by Seneca's day, for Cicero and Varro men-

tion them by name.⁴⁰ Seneca might have had an opportunity to read one or both of them himself or to learn about their contents at a remove. Neopythagorean ideas were of great interest in the Roman intellectual milieu to which he belonged.⁴¹ Be that as it may, he certainly employs the same formulaic disjunction between sexual activity for pleasure or for reproduction that Charondas and Ocellus employ. Further, Seneca promotes other aspects of the Pythagorean way of life and philosophy as well. He maintains the Pythagorean tenets that the body imprisons the immortal soul and that the soul must separate itself as much as possible from the weighty dregs of bodily existence.⁴² He also states that the example of Pythagoras inspired him to become vegetarian for a time.⁴³ Seneca's endorsement of procreationism is consequently not as surprising as it might seem for those who think of Seneca as a Stoic. Rather, he admires the ascetic strain in Pythagorean thought as he learned it in Rome, so much so that he becomes an honorary Neopythagorean in his sexual ethics.

MUSONIUS

Musonius, though primarily Stoic, like Seneca, similarly promotes Neopythagorean procreationism. In *Diatriba* 12 he urges young men "to think that

with a proliferation of other kinds of cupidity, as shown in chapter two. For Seneca's procreationism see also M. Foucault, *Care of the Self*, 178–9.

36. *De matrimonio*, 188 Frassinetti, excerpted by Jerome, *Adv. Iov.* 319a.

37. *De matrimonio* 188 Frassinetti, from Jerome, *Adv. Iov.* 318c.

38. For other ways in which Seneca's thought is incompatible with Stoicism, see J. Rist, "Seneca and Stoic Orthodoxy" (1989), 1993–2012.

39. The renewal of greater interest in Pythagoreanism in Rome ca. 98–45 B.C.E. is discussed by J. Dillon, *The Middle Platonists* (1996), 117–9 and W. Burkert, "Pseudopythagorica," 10–3. M. Humm explores the broader question about the influence of Pythagoreanism in southern Italy and in early Roman society, "Les origines du pythagorisme romain: Problèmes historiques et philosophiques, I–II" (1996), 339–53, (1997), 25–42. See too L. Ferrero, *Storia del pitagorismo nel mondo romano (dalle origini alla fine della repubblica)* (1955). P. Kingsley (*Ancient Philosophy, Mystery, and Magic*, 317–34) challenges Burkert's thesis that Pythagoreanism died down before its Neopythagorean and largely Roman revival.

40. Cicero, *Leg.* 2.5.14, and Varro refers to Ocellus in a passage preserved by Censorinus (4.3, ed. O. Jahn, 125.10), and note as well W. Burkert, "Pseudopythagorica," 46, and H. Thesleff, "Doric Pseudo-Pythagorica," 73.

41. Seneca admired and studied with Quintus Sextius Roscius, a Roman who established a philosophical group known as the Sextii. This group was in the main Stoic but also had Pythagorean leanings. On this aspect of Seneca's life, see M. Griffin, *Seneca: A Philosopher in Politics* (1992), 36–42, and L. Ferrero, *Storia del pitagorismo*, 360–78. Seneca presumably also knew the Pythagorean astrologer Thrasyllus, who was prominent in the court of Tiberius and redacted Plato's writings. For the strong Pythagorean elements of Thrasyllus's thought and his association with Tiberius, see H. Tarrant, *Thrasyllan Platonism* (1993), 8–11 and fragments T19a–b as well as T13–16b, 222–230. My thanks to T. D. Barnes for noting the likely influence of Thrasyllus on Seneca's Pythagorean leanings.

42. The body is "this trivial body, the prison and chains of the soul" (*compusculum hoc, custodia et vinculum animi*), while the soul is "sacred and eternal" (*sacer et aeternus*) unlike the body, *Helv.* 11.5–7. Released from the body, the soul that quickly departs has an easy road to the gods because "it has dragged along the least amount of sediment and weight" (*minimum faeces, pondus traxerunt*) from the body. Great souls find no joy lingering in the body, rather they chafe at its confines. "Thus it is that Plato declares that the entire soul of the wise man reaches out to death, ponders this, and always with this desire strives to be borne outward and away" (*sapientis animum totum in mortem promineret, hoc meditari, hoc semper cupidine ferri in externa tendentem*), *Marx* 23.1–2.

43. *Ep.* 108.17. For the Pythagorean provenance of vegetarianism in antiquity see W. E. C. Guthrie's collection and analysis of the ancient evidence, *History of Greek Philosophy*, vol. 1, 187–91, to which should be added Porphyry's *De abstinentia*. Note further R. Sorabji, *Animal Minds and Human Morals: The Origins of the Western Debate* (1993), 172–4.

the only just sex acts (*δίκαια ἀφροδίσια*) are those performed in marriage for the procreation of children" (86.4–6). Only this way of thinking constitutes right reasoning. All other sexual practices are "lawless" (*παράνομα*) to varying degrees. Adultery and male homoerotic sexual activity are "most unlawful" (86.8–10). Men's sexual relations with prostitutes, free unmarried women, and female slaves are unlawful, shameful, and blameworthy (86.10–12), though not quite so outrageously as adultery and male homoerotic relations. Musonius thus accepts the Neopythagorean stance that there are two and only two possible goals for human sexual relations: reproduction within marriage or pleasure. Unless sexual activity is marital and for the purpose of procreation, it is wrongly "on the hunt" for pleasure and thus unjust and lawless. This holds true "even in marriage" (86.7–8). Musonius therefore joins a small but growing chorus of men who promote procreationism in its inflexible mode.¹⁴ He even brings new life to the Pythagorean image of brutish sexual activity. Men who are sexually deviant besmirch themselves "just like pigs" and they are happy rolling in the mud (86.27–29). With a touch of Circe's power, then, Musonius turns such men into swine. His magic trick would transform virtually the entire male populace of the Roman Empire, for in his day the dictate still had a long way to go before gaining greater prevalence by late antiquity.

As with Seneca, Neopythagoreanism is the most likely provenance of Musonius's sexual principle. Though very little is known about his life, Musonius was conversant with the intellectual milieu of Rome, which by then had a penchant for Neopythagorean ideas. His writings show that he admired the Pythagorean way of life. *Diatriba* 1.4, for example, indicates that Musonius knew enough about the life of Pythagoras to recommend it as a model worth emulating. In order for young men to become wise, they must adopt the married style of the philosophical life, which is best exemplified by Pythagoras and two other married philosophers (90.24–92.1). The Neopythagorean revival in Rome thus probably influenced Musonius just as it did Seneca.

Musonius and Seneca are the only known Stoics who advocate the procreationist dictate. They are completely anomalous as Stoics in so doing,¹⁵

14. On this aspect of Musonius's procreationist argument, see also M. Foucault, *Care of the Self*, 108–9.

15. Neither Marcus Aurelius nor Epictetus argue in favor of the procreationist restriction on human sexual behavior. Marcus Aurelius does not raise the topic, while Epictetus rejects the claim that marital sexual activity alone is permissible, and he tolerates some practices of non-marital sexual activity. Epictetus states that a male who engages in sex acts before marriage should partake only of acceptable customary ones and that males who remain sexually abstinent until marriage should tolerate males who do not, *Ench* 33.8. These extramarital kinds of sexual activity are customarily not motivated by a desire to reproduce. Musonius, by contrast, explicitly argues against the view that sex acts other than procreative marital intercourse are

for this Pythagorean rule conflicts fundamentally with the basic principles of Stoic eros. Therefore, it is completely misguided to infer anything about the tenor of Stoic sexual ethics from either Seneca or Musonius, as many scholars have done who have regarded procreationism as a Stoic sexual principle. Both Seneca and Musonius are ascetic Pythagoreans in Stoic clothing, at least with regard to their sexual ethics.

CONCLUSION

Advocates of procreationism support the principle that a temperate and deliberately reproductive goal within marriage is the sole justifiable and permissible goal either of sexual intercourse, or—more extremely—of sexual activity of any sort, especially if it involves ejaculation. This sexual regulation is Pythagorean and develops from uniquely Pythagorean concerns. The first concern is to limit the degree of discordance that immortal souls suffer during embodiment. The second and related concern is to remedy the individual and social corruption that the Pythagoreans attribute to heedless acts of discordant reproduction. Such practices are violent, licentious, and destructive to the harmonic intervals of the souls undergoing embodiment. The practices also harm the parental agents, as Seneca in particular indicates. The procreationist dictate is reinforced by several persuasive strategies. First, persons must diet and exercise to prevent the sexual appetite from being overfed. Second, they should regard unrestrained and nonpurposeful reproductive sexual activity as behavior fit only for brute animals. Third and most striking, they should revere semen and regard its willful misdirection as the destruction of a life. The Pythagoreans were in earnest about supporting this reproductive technology. In the Neopythagorean expression of this principle, however, greater stress is placed on the need for deliberate reproduction, as opposed to deliberate and moderate reproduction. Charondas, Ocellus, Seneca, and Musonius appear to have been somewhat distanced from the older Pythagorean eugenics that originally motivated procreationism.

The procreationist regulation at the outset showed a tendency to apply for the duration of the human life span, given the Pythagorean desire to "put as many impediments as possible on human sexual activity." Plato's *Lotus* is the only demonstrable exception to this tendency, for Plato finds lifelong procreationism an unwanted and unfeasible proposition. He avidly supports a limited application of the principle, only for citizens in their prime who still need to reproduce. Thereafter the citizens are left to their own

acceptable practices, and he especially censures the sort of men who would have the audacity to engage in extramarital sexual activity of any kind, 86.8–24.

sexual devices so long as they do not get out of hand. Aristoxenus's Pythagoreans are undeniably strict procreationists with regard to sexual intercourse that may lead to conception. Though it remains somewhat an open question whether they prohibited all sexual activity other than copulation, they were nonetheless strongly inclined in that direction. Charondas, Ocellus, Seneca, and Musonius, however, show neither Plato's reflective modification of the procreationist principle nor the vestigial ambiguity of Aristoxenus. If the sexual activity is marital and reproductive in intent, then practice it, if not, stay away.

Procreationism in its aphoristic Neopythagorean form gains wider currency by the time of the early Roman empire. The stillborn nuptial number, by contrast, was at this time nothing but a puzzle for antiquarians, as Cicero attests.⁴⁶ Still, procreationism proves to have been as distinctive and strange a Pythagorean idea in its own way as the nuptial number is, even though it later underwent reprocessing and simplification. In this form, which was easy to teach and easy to grasp, the dictate gained enough popularity to elicit support from thinkers whose main affiliation was not Pythagorean, such as Seneca and Musonius; and it was well positioned to spread further into the Jewish Platonism of Philo and into ecclesiastical Christianity via Christian Platonism. By the second century of the common era, therefore, procreationism was well placed to gain a far greater regulatory hold on people's sexual lives than it ever had before.

[46. *Att* 7.13.5, and see too M. Allen, *Nuptial Arithmetic*, 5–11.