Sexuelle Zwischenstufen” in Early Greek Medicine and Philosophy

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The classical scholars Marie Delcourt and Luc Brisson have devoted book-length treatments to the figure of the hermaphrodite in Greco-Roman art, history, and mythology. Delcourt\(^1\) explored the paradox that Greek myth and cult treat figures of ambiguous gender as symbols of fertility or wisdom, whereas actual intersex infants were considered portentous monstrosities and were usually destroyed soon after birth. Luc Brisson\(^2\), writing some 40 years later, posits a diachronic shift in perception that occurred in early imperial Rome, when authors such as Pliny and Diodorus Siculus abandon the naïve superstition of the Roman republican period, when such infants were interpreted as ominous prodigies of civil discord, and instead narrate case-histories of girls who develop male genitalia at the time of puberty and are treated surgically to become fully male, thereafter living normal lives. In the same period, the poet Ovid’s mythological compendium, the *Metamorphoses*, gives sympathetic treatment to more than one story of such miraculous sexual transformation. However, neither Delcourt nor Brisson investigate earlier Greek philosophical and medical speculation about the etiology of gender variance, which is objective and remarkably free of pejorative language. I would argue that the roots of the more enlightened, medicalized view of intersex and gender-queer persons that Brisson finds in the Roman imperial period are already implicit in pre-Socratic and Hippocratic writings of the fifth century BCE. These sources are also almost completely ignored in Thomas Laqueur’s influential *Making Sex*\(^3\), as they are not consistent with his model of a monolithic one-sex theory in classical antiquity.

The Hippocratic *On Regimen* 1.28-29 posits a continuum of six gender positions from most masculine to most feminine, depending on the particular combination of gender-determinant seed from the father and mother. If both father and mother contribute male seed, a highly masculine man will be engendered, “brilliant in soul and strong in body, unless harmed by subsequent diet.” If the father contributes a male seed and the mother a female, but the father’s seed predominates, then an intermediate man results, “brave, but less brilliant.” However, if the father contributes a female seed and the mother a male seed, and the male predominates, the result will be an *androgynos*, an “effeminate man,” not intersexed or hermaphroditic, but weak and cowardly, as implied by *Androgynoi* as the alternate title of Eupolis’ comedy otherwise known as the *Astrateutai*\(^4\). Inversely, if both father and mother contribute female seed, the result will become a beautiful and well-mannered woman. If the father contributes a male seed and the mother a female, and the mother’s seed predominates, then an intermediate woman comes about, “bolder than the preceding, but nevertheless modest.” However, if the father contributes a female seed and the mother a male seed, but the father’s female seed predominates, the girls that result prove to be “mannish.” In other words, in the cases of mixed seed, the anatomical gender is determined by whichever seed proves to be stronger. However, the most gender-deviant souls and personalities result when the masculine or feminine seed comes only from the parent of opposite gender. There are thus two variables in the cases of mixed seed: which

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\(^4\) For the alternate titles and available evidence concerning this play, see Storey, Ian: Eupolis, Poet of Old Comedy, Oxford 2003.
gender of seed predominates, and whether the seeds contributed are of the same gender as the parent. The six possible combinations that result create a kind of Kinsey scale of gender identity. The recognition of six possible gender positions reveals a sophisticated system of character analysis and classification that cannot have emerged out of a vacuum. This essay will explore the precedents for this theory of genetic determination in the embryological doctrines of Parmenides and Empedocles.

Parmenides was unquestionably interested in such matters. Indeed, some traditions, including an inscription from Elea, suggest that Parmenides himself may have been a physician or was at least recognized as the inspiration behind a distinctly Eleatic school of medicine. The Doxa portion of Parmenides’ poem refers to a goddess in the middle of the physical world “who rules all things of hateful (stugeros) birth and mixture, sending female to mingle with male and male with female” (fr. 12.4-6 DK). Eros (fr. 13), and variable mixtures of contrary qualities in the body that determine thought and perhaps behavior (fr. 16). Fr. 17 says that embryos become male when conceived on the right side, female when on the left side:

“Boys on the right, girls on the left...”

Galen, who quotes this line, interprets it to mean the right and left side of the womb, however the line itself could equally designate seed from the father’s right and left testicle. If Galen obtained this verse from an anthology, he may not have known its context and may have misinterpreted its meaning in line with the common Hippocratic doctrine, expressed in Aphorism 5.48, that fetuses found on the right side of the womb are “more often” (Gk. μᾶλλον/mállo) male and fetuses found on the left side more often female; even Galen elsewhere acknowledges that this is merely a tendency to which occasional exceptions are found (4.633 Kühn).

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5 For the importance of this text within a “sliding scale” theory of genre, see Holmes, Brooke: Gender: Antiquity and its Legacy, Oxford 2012, 54-55.
6 Ebner, Pietro: Scuole di medicina a Velia e a Salerno, in: Apollo 2 (1962), 125-136, 128-134; Ebner, Pietro: Parmenide medico Ouliades, in: Giornale di Metafisica 21 (1966), 103-114; Benedum, Jost/Michler, Markwart: Parmenides Uliades und die Medizinschule von Elea, in: Clio Medica: Acta Academia Internationalis Medicinae 6 (1971), 295-306. The inscription on an accephalous herm from the first century CE reads Parmenidês Purês Ouliades physikos, and is located contiguous to three other inscribed statue bases honoring men who are specifically identified as physicians. While the term physikos is ambiguous, often denoting any researcher into Nature, the epithet Ouliades has been shown to refer to Apollo in his healing aspect, suggesting that whatever medical fraternity or college dedicated these figures traced its descent back to Parmenides. However, this evidence is much later than Parmenides’ own lifetime and tells us little about his contemporary reputation in Velia. For a more cautious appraisal, see Nutton, Vivian: The Medical School of Velia, in: Parola del Passato 25 (1970), 211-225.
7 Although fr. 12.1-3 has received considerable scholarly comment, few (with the exception of Coxon, A. H. The Fragments of Parmenides, Assen 1986, 242) have spoken to the force of the epithet stugeros in 12.4, which is unmistakeably negative, associated since Homer with death and disease. For Parmenides, all genesis is “hateful” inasmuch as it is illusory rather than real. Fr. 16 is the object of controversy in regard to text, translation, and interpretation, with some critics assigning it to the “Truth” portion of Parmenides’ poem (Loenen, Johannes Hubertus Mathias Marie: Parmenides, Melissus, Gorgias. A Reinterpretation of Eleatic Philosophy, Assen 1959, 58-60; Herschbell, Jackson P.: Parmenides’ Way of Truth and B16, in: Apeiron 4 (2, 1970), 1-23), or regarding the “mixture of much-wandering limbs” as proportions of universal elements like Night and Light rather than the literal limbs of a human body (Tarán, Leonardo: Parmenides, Princeton 1965, 253-263; Bolbach, Jean: Sur deux fragments de Parménide (4 et 16), in: Revue des études grecques 70 (1957), 56-71, 67; Laks, André: The More and The Full. On the Reconstruction of Parmenides’ Theory of Sensation in Theophrastus, De Sensibus, 3-4, in: Oxford Studies in Ancient Philosophy 8 (1990), 1-18). In the main, I follow the interpretation of Vlastos and Coxon, which seems most consistent with its citation in Aristotle, Metaphysics 4.5, and Theophrastus, De Sensu 3 (Vlastos, Gregory: Parmenides’ Theory of Knowledge, in: Transactions of the American Philological Association 77 (1946), 66-77; Coxon 1986, 247-252). Curd sees the fragment implying a contrast between thought based on bodily sensation (phroneët) and the wise man’s more purely noetic cognition of Being (noëma) (Curd, Patricia: Thought and Body in Parmenides, in: Cordero, Nester-Luis (ed.): Parmenides, Venerable and Awesome. Proceedings of the International Symposium, Las Vegas 2011, 115-134).
The doxographic tradition concerning Parmenides’ doctrine offers considerable confusion, complicated by textual problems and the uncertainties of just how much of Parmenides’ original poem each source knew and whether they correctly understood his often spare and obscure words. Aetius V 7.4 (= Parmenides A53 D-K, Test. 84 Coxon) gives an account at variance with what is implied in fr. 17:

Anaxagoras and Parmenides say that seeds from the right (testicle) are deposited in the right parts of the mother, and from the left (testicle) in the left parts (and a male child results). But if the order of the deposit is reversed, the offspring is born female.

According to this testimonium, Parmenides believed that a male would result when the seed from the father’s right testicle was deposited on the right side of the mother’s womb, or the seed of the left testicle on the left side of the womb.10 Conversely, a female would result if the seed from the right testicle landed on the left side of the womb or vice versa. Males result from concordance of testicle and womb, females from their dissidence. Censorinus 6.8 (= Parmenides A54 D-K, Test. 52 Coxon) explores a connected, but different issue, namely whether a son resembles his father or mother more: according to this text, if the dexterae partes have given seeds, then the son is similar to the father, but when the laevae partes have done so, the son is more similar to his mother:

\[\text{ceterum Parmenidis sententia est, cum dexterae partes semina dederint, tunc filios esse patri consimiles, cum laevae, tunc matri.}\]

“But Parmenides’ opinion is that when the right parts have given seeds, then sons are similar to their father, and when the left parts have done so, then sons are similar to their mother.”

This can be made consistent with Aetius’ unemended testimony if we interpret Censorinus’ phrase to imply by dexterae partes the seed of the right testicle in the right side of the womb, and by laevae partes the seed of the left testicle in the left side of the womb. The offspring is male in each case, but a male more like the father on the right side and more like the mother if on the left side. Sex and resemblance are two separate parameters.11

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10 Because of the disagreement with fr. 17, Diels, Hermann: Doxographi Graeci, Berlin 1879, 194 proposed that Aetius’ text must have been truncated, actually ending with a fuller expression of gender variation in the case of mixed sides: \(<\text{ta men arrena} > \text{genesthai <thêlûtera, ta de} > \text{thêlea <arrenkötera}>\), “the males become more female, the females more male.” On this understanding, Aetius’ first sentence no longer refers to male births alone, but to male births (when the right testicle’s seed is deposited on the right side of the womb) and female births (when seed from the left testicle is deposited on the left side of the womb). Tarán 1965, 264-265 n.98 favors a similar emendation. This also has the advantage of agreeing more closely with what Aristotle (De Generatione Animalium 763b30-35 = Anaxagoras, A107 D-K) tells us about “Anaxagoras and other of the physiologoi,” a phrase that might include Parmenides, whose view is not otherwise listed in this chapter of Aristotle reviewing Presocratic theories: Aristotle is very clear that Anaxagoras and these other physiologoi believed that males resulted from the right testicle depositing a male seed in the right side of the mother’s womb, females from the left testicle depositing a female seed in the left side of the mother’s womb. On the other hand, Coxon relies more on making the text consistent with Aetius V 11.2, and therefore emends to \(\text{genesthai thêlea <ta toi patri homoia, ërenra tei matri>}\), “females become similar to their father, and males to their mother.” (Coxon 1986, 253) While we cannot rule out such textual corruption, it would be hazardous to base much on any particular reconstruction. BlerSch goes too far in thinking that we have here an explanation of hermaphroditic births (BlerSch, Konrad: Wesen und Entstehung des Sexus im Denken der Antike, Stuttgart 1937, 46).

11 Censorinus’ testimony is complicated by the fact that a bit earlier in his treatise (6.5 = Parmenides, A54 D-K, Test. 51 Coxon 1968), he attributes to Parmenides an entirely different mechanism for determining which parent the child more resembles: \(\text{at inter se certare feminas et maris et, penes urum victoria sit, eius habitum referri auctor est Parmenides.}\)

But women and men compete with each other, and whichever gains the victory, its bearing is represented (in the child), according to Parmenides.

This is suspiciously similar to the determination of sex by the prevalence of one parent’s seed over the other, a doctrine Censorinus 6.4 just attributed to Alcmaeon of Croton (= 24 A14 D-K), that Aristotle (De Generatione Animalium 764a6-12) attributes to Democritus (= 68 A143 D-K), and that is reflected in the passage from the Hippocratic On Reginem that we discussed above. Censorinus may have misconstrued an attribution he found in Varro’s Tubero, which is generally assumed to
Aetius V 11.2 (= Parmenides A54 D-K, Test. 85 Coxon) expresses the same basic idea concerning resemblance, but framed in different terms:

“Parmenides says that whenever the offspring (ho gonos) is derived from the right part of the mother, (it is similar) to fathers, but whenever from the left part (of the mother), to mothers.”

On the right side of the womb, the offspring is like the father, but when on the left side of the womb, like the mother. If we take the term ho gonos to refer specifically to male offspring, this restates what we find in Censorinus 6.8. If, however, ho gonos is meant to cover both male and female offspring, as the term usually does, this testimonium could supplement Censorinus’ statement by implying that this principle applies to daughters as well: a seed from the left testicle in the right side of the womb creates a daughter who resembles the father more, a seed from the right testicle in the left side of the womb a daughter who resembles the mother more. Therefore, sex is created by concordance or dissidence of seed, resemblance by which side of the mother’s womb.

A curious passage from Lactantius (De opificio Dei 12.12-13 = Parmenides, A54 D-K), which does not mention Parmenides by name, but appears to come from an ancient source, proposes a slightly different set of dual parameters:

\[ \text{dispares quoque naturae hoc modo fieri putantur: cum forte in laevam uteri partem masculinae stirpis semen inciderit, marem quidem gigni opinatio est, sed quia sit in feminea parte conceptus, aliquid in se habere femineum supra quam decus virile patiatur, vel formam insigne vel nimum canore vel corporis levitatem vel artus delicatos vel statutam brevem vel vocem gracilem vel animum inbecillum vel ex his plura. item si partem in dexteram semen feminini generis influxerit, feminam quidem procreari, sed quoniam in masculina parte concepta sit, habere in se aliquid virilitatis ultra quam sexus ratio permittat, aut valida membra aut immoderatum longitudinem aut fuscum colorem aut hispidam faciem aut robustam aut animum audacem aut ex his plura.} \]

“All disparate natures are thought to come about in this way: when by chance a seed of masculine offspring has fallen in the left part of the uterus, the opinion is that a male is indeed born, but because he was conceived in the feminine part, he has in himself something of the feminine beyond what manly glory allows, either remarkable beauty or exceptional paleness or a lightness of body or delicate limbs or short stature or a thin voice or a foolish spirit or several of these features. Similarly, if a seed of feminine type has flowed into the right-handed part, a woman is indeed born, but since she was conceived in the masculine part, she has something of virility beyond what the measure
of her sex permits, either strong limbs or exceptional tallness or dark complexion or a hairy face or an ugly visage or a loud voice or a daring spirit or several of these features.”

The passage goes on to explain that properly formed males and females are engendered when masculine seed falls on the right part of the uterus, feminine seed on the left. The passage does not make it clear whether the gender is determined simply by the father’s seed or by a combination of father’s and mother’s seed. What it does make clear is that resemblance is determined by which side of the mother’s womb: offspring on the right side favor their father, those on the left side their mother. Lactantius describes resemblance in starkly gendered terms: a male seed deposited in the left part of the mother’s womb will be an effeminate man, possessing remarkable beauty, pale skin, light weight, delicate limbs, thin voice, or a foolish mind. Conversely, a female seed deposited in the right part of the mother’s womb will be mannish, a tall woman with strong limbs, dark complexion, hairy or ugly face, strong voice, or bold character. We may see here a nascent distinction between anatomical sex and gender traits. This doctrine could be consistent with Parmenides, fr. 17, if we interpret it to refer to the right and left side of the father’s testicles, as suggested by Aetius V 7.4. It is also consistent with Aetius V 11.2 on the side of the mother’s womb determining resemblance. Diels and Kranz therefore consider this passage to refer to Parmenides and list it among their testimonia; other commentators, including Tarán and Lesky, doubt its pertinence.

Amid this confused welter of testimonia and one solid text (fr. 17), the only thing we can say for certain is that the opposition of right and left was of central importance to Parmenides’ embryology, and he appears to make a distinction between an offspring’s anatomical sex and its greater resemblance to its mother or father. Aetius V 7.2 (= Parmenides A53 D-K, Test. 83 Coxon) adds to this that Parmenides considered males to be propagated in the North, females in the South, because males are denser and presumably colder, whereas females are spongier and presumably warmer:

“Parmenides says the opposite: males are engendered in the direction of the Arctic (for they partake in more density), females in the direction of the South because of their porousness.”

This testimony deserves credit, as it coincides with what Aristotle, *De partibus animalium* 648a29-31 (Parmenides, A53 D-K, Test. 34 Coxon) reveals about Parmenides’ identification of women as hot, men cold:

“Parmenides and certain others say that women are warmer than men, because female things come about on account of warmth and abundance of blood. Empedocles says the opposite.”

How this fits in with the right-left doctrine attributed to Parmenides is unclear, but it does suggest an interlinked series of dominant oppositions, not unlike the Pythagorean Table of Opposites (Aristotle, *Meta.* 1.5 986a15-27 = 58B A5 D-K): male-female, right-left, active-

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14 See also Blersch 1937, 46.
15 Coxon does not list it among his testimonia (Coxon 1968). Lesky doubts that either Lactantius or Aetius V 7.4 reflect genuine Parmenidean doctrine, suspecting confusion with Anaxagoras (Lesky 1951, 45-46; see also Tarán 1965, 265 n.98). However, Tarrant is more inclined to credit Lactantius’ testimony as consistent with fr. 17; he speculates that right-hand seeds may wind up in the left side of the womb or vice versa as a result of abandoned, rather than orderly intercourse (Tarrant, H. A. S: Love among the Intellectuals, in: Ancient History 32 (2002) 64-84, 68).
passive, North-South, up-down, dense-rarefied, cold-hot. In each case, the privileged term corresponds with the masculine. Indeed, male-female immediately follows right-left on the Pythagorean Table, and the correlation between these oppositions may have a long history in the assumptions of folk medicine and midwifery; it is interesting that the same correlation is found in ancient Indic medical texts. This is, after all, part of the Doxa portion of Parmenides’ poem: what people commonly think, not what the philosopher declares to be true.

Quite different from this oppositio nal mechanics is fr. 18 DK, preserved in a Latin translation by the fourth-century CE medical writer Caelius Aurelianus, whose work is largely derived from the second-century CE gynaecologist Soranus:

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\begin{align*}
\text{femina virque simul Veneris cum germina miscen} & \\
\text{venis informans diverso ex sanguine virtus} & \\
\text{temperiem servans bene condita corpora fingit.} & \\
\text{nam si virtutes permixto semine pugnent} & \\
\text{ nec faciant unam permixto in corpore, dirae} & \\
\text{nascentem gemino vexabunt semine sexum.} & \\
\end{align*}
\]

“When woman and man at the same time mingle together the seeds of love, a power, shaping from the different blood in their veins, preserving proportion, makes well-formed bodies. For if the powers fight against each other when the seed is mixed and do not make one in the mingled body, terribly they will trouble the sex born from the twin seed.”

When mother’s and father’s seed are properly mingled, a normal boy or girl results, but when their qualities (virtutes) fight (pugnent) and do not properly unify, they will “trouble” (vexabunt) the “developing sex” (nascentem sexum) with twin seed. This is not in conflict with the conviction that right and left determine the actual anatomical sex of the child, but does seem more difficult to square with the notion that the position on the right or left side of the womb determines which parent the child more resembles. Or could it be that Parmenides considers gender deviance to be a third parameter quite separate from which parent’s features a child most resembles?

Or could it be that Caelius’ attribution of this fragment to Parmenides is incorrect? As Owen Kember noted in a 1971 article, fr. 18 implies “an advanced form of chemical mixture” which seems later than Parmenides. “The fragment and Caelius’ comments deserve attention but their

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16 Anomalous, however, is the presence of cold as a privileged term, given the Pythagorean Table’s listing of Light in the first column, Darkness in the second. Guthrie suggests that this may be because Parmenides’ embryological doctrines rely more on empirical observation than abstract schemata (Guthrie, W. K. C.: A History of Greek Philosophy. II, The Presocratic Tradition from Parmenides to Democritus, Cambridge 1965, 77-80). It might also be that the most important terms for Parmenides are not hot and cold per se, but density and porosity, as implied in Aetius V 7.2. Not only are women’s bodies perceived as more porous because of their cavities and accumulations of fat, but porousness is metaphysically negative for Parmenides inasmuch as it implies empty spaces of non-being.

17 See Blersch 1937, 42-44 and Lesky, 1951, 39-40, also noting the determinative role of right = masculine and left = feminine in the Oneirocritica of Artemidorus.
authenticity must be suspect.”18 The fragment’s distinction between material *semina* and immaterial *virtutes* or qualities has also seemed doubtful to some.19

The language of mixture and conflict between male and female seeds is suspiciously close to Empedocles’ dialectic of Love (often called Aphrodite) and Strife among elements. Empedocles, later credited as the founder of the Sicilian school of medicine,20 was also intimately concerned with the processes of generation and birth, as we see from the abundant testimonia in A79-83 DK: he commented on menstruation, the nourishment of the fetus, the timing of fetal development, the birth of twins and triplets of both the same and opposite sex, and why children sometimes resemble neither parent, which he explains by the mother’s mind being fixed on another image, such as a statue (Aetius V12.2). Fr. 61.3-4 DK refers to bi-sexed creatures as common in the earlier stages of life’s evolution, and fr. 62 suggests an asexual and autochthonous stage.21 Similarly, Empedocles appears to have held that plants could be hermaphroditic (Aetius V 26.4; Ps.-Aristotle, *De Plantis* 817a1-12 = A 70 D-K). Fr. 63 tells us that some limbs of a child may come from the male, others from the female, as if to suggest that the genital sex of the child may not be consistently reflected in other parts of the body. Fr. 92 explains the sterility of mules through density of parents’ seed, which cannot mingle properly. Clearly, Empedocles was interested in unusual combinations, inconsistencies, aberrations, and malfunctions of gender and sexuality, which he explains in terms of developmental processes located within the cyclical alternation of Love and Strife, whereas Parmenides’ concern, apart from the disputed fr. 18 and the uncertain testimony of Lactantius, was with the normative. Indeed, Empedocles’ concept that mother and father’s seed might fail to unite properly and thereby create a sexually dysfunctional offspring in the form of mules (fr. 92) directly parallels what the Caelius Aurelianus passage says about sexually troubled human offspring.

Of particular interest to us are two testimonia concerning Empedocles’ doctrines. Aetius V 8.1 discusses the birth of “monsters” (*terata*):

> “Empedocles says that monsters are born from a superabundance or lack of seed or from a disturbance of movement or from division into multiple parts or from bending away.”

Empedocles traces their aetiology to a variety of causes, either excess or deficiency of sperm, a disturbing movement (presumably in the womb), division into multiple parts, or finally *apotenein*. This verb is generally translated as “bending away” (LSJ I), the sense of which is not immediately clear in this context; most attestations of the verb specify “bending away” from one thing toward something else.22 This relatively rare verb is first attested in fourth-century prose, so it is unlikely to have been a term that Empedocles actually used; Aetius more likely employs it as an abbreviation for a process Empedocles described at greater length. In the context of embryological malfunction, I think “bending away” probably designates a failure of

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18 Kember 1971, 75.
19 See Lesky 1951, 49, who in other respects is inclined to credit the authenticity of the fragment.
22 Aetius’ use of the articular infinitive with no elaboration may be the equivalent of the abstract noun *apoteneis*. Interestingly, one of the earliest attestations of this noun is in a medical text, Soranus, *De signis fracturarum* 17, where it refers to the bending inward of a broken rib. However, the context spells out the inward direction of this particular bending (*eis to endon*), so the applicability to the absolute usage of *apotenein* in our present passage is uncertain.
the father’s and mother’s seed to unite fully and properly, which is exactly the cause of the sexually troubled children in the Caelius Aurelianus passage.

Numerous sources, including Aristotle, *De Generatione Animalium* 764a1-6, and Aetius V 7.1, tell us that heat and cold were fundamental factors for sex determination in Empedocles, and this doctrine appears to be confirmed by frs. 65 and 67; unlike Parmenides, however, who associated the male with cold and the female with heat, Empedocles reversed the order. Censorinus 6.6 explains that if the male and female seed were equally hot, a male child similar to his father would result. If each parent’s seed were equally cold, a female similar to the mother would result. However, if the father’s seed were warmer and the mother’s seed cooler, a son would be born who resembled his mother more. If the father’s seed were cooler and the mother’s warmer, a daughter would be born who resembled the father more:

> ex dextris partibus profuso semine mares gigni, at e laevis feminas Anaxagoras Empedoclesque consentiunt. quorum opiniones, ut de hac specie congruae, ita de similitudine liberorum dispariles; supra qua re Empedoclis, disputata ratione, talis profertur: si par calor in parentum seminis fuit, patri similem marem procreari; si frigus, feminam matri similem. quodsi patris calidius erit et frigidius matris, puerror fore qui matri vultus repraesentet: at si calidius matri, patris autem fuerit frigidius, puellam futuram quae patris reddat similitudinem.

“Anaxagoras and Empedocles agree that males are born when the seed is poured out from the right parts, women when poured out from the left parts. Their opinions, even though parallel on this issue, are different concerning children’s resemblance (to their parents). Concerning which matter, such is Empedocles’ view revealed, with the cause disputed. If there is equal heat in the seeds of the parents, a male similar to his father is engendered; if there is equal cold, a woman similar to her mother. But if the seed of the father will be warmer and that of the mother colder, there will be a boy who would represent the appearance of his mother. And if the seed of the mother will have been warmer and that of the father colder, then there will be a girl who will bring back a similarity to her father.”

In other words, a harmony of seed temperature produces a child whose traits are most like the parent of the same sex, whereas a divergence of seed temperature produces a child whose traits are more like the parent of the opposite sex. The reliability of Censorinus’ testimony is brought into question, however, by his attribution of a right-left doctrine of sex determination to both Empedocles and Anaxagoras, neither of whom seems to have held such a doctrine based on any other fragments or testimonia. Indeed, it seems to contradict the very different causation by seed temperature that Censorinus goes on to explain for Empedocles. However, even if he errs in one part of his summary, where he rather carelessly attributes to Empedocles and Anaxagoras a doctrine of Parmenides, Censorinus may transmit more reliable information when he cites Empedocles as the single source for what he says about hot and cold seed.

Lesky and others have questioned whether Censorinus here reflects genuine Empedoclean doctrine, since Aristotle (*De Generatione Animalium* 764a1-6; cf. B65 and more uncertainly B67) claims that it was the temperature of the mother’s womb that determined sex selection.

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23 For a more thorough review of Anaxagoras’ embryological doctrine than is possible here, see Kember, Owen: Anaxagoras’ Theory of Sex Differentiation and Heredity, in: *Phronesis* 18 (1973), 1-14.

24 See Mansfield on Varro’s (and therefore Censorinus’) ultimate source in the *Vetusta Placita*, a Hellenistic sylloge of selections from the Pre-Socratics arranged to show contrasting opinions on given topics (Mansfield, Jaap: Doxography and Dialectic. The *Sitz im Leben* of the ‘Placita’, in: Vogt, Joseph/Haase, Wolfgang/Temporini, Hildegarde (eds.): Aufstieg und Niedergang der römischen Welt, II.36.4, Berlin 1990, 3056-3229, 3179-83). Misattributions can easily arise when later authors sample from this text, however careful its original editors may have been.

25 Lesky 1951, 36-38; Geurts, Petrus Melchior Maria: De erfelijheid in de oudere grieksche wetenschap, Nijmegen 1941, 45.
According to Empedocles, with a warm womb (i.e. one in which the menses were more recent) producing males and a cold womb (i.e. one in which the menses were less recent) females:

“Others say (that sex selection takes place) in the mother’s womb, as Empedocles does: he says the seeds coming into a warm womb become male, those into a cold womb female, with the flow of the menstrual fluids being the cause of warmth or coldness, because it is either colder or warmer and longer ago or more recent.”

Censorinus’ testimony could be made consistent with this, however, if his source really meant that a father’s warmer seed combined with a mother’s colder seed produced a daughter more like the father, and a father’s colder seed combined with a mother’s warmer seed produced a son more like the mother.

Divergence of seed temperature may be what is implied in the language of the Caelius Aurelianus fragment about the parents’ seed “fighting” each other rather than uniting harmoniously to create a perfectly formed boy or girl. Given the centrality of hot-cold and dry-wet in Greek physics and medicine, this is far more likely to be what is concealed behind the Latin term virtutes (almost certainly a translation of the Greek dynameis) than anything implied in the Parmenidean right-left doctrine.

Could it be that fr. 18 was really from Empedocles’ poem and falsely attributed to Parmenides by Caelius Aurelianus or his source Soranus? Some aspects of Caelius’ citation are suspect: he refers to this fragment as an epigramma from Parmenides’ libri de natura. Diogenes Laertius 1.16 is clear that Parmenides’ poem was one continuous book, whereas he attributes (8.77) no less than 5000 lines to Empedocles, necessitating multiple books, as well as a collection of epigrams (likely a sylloge). The doxographical tradition, going back to the Vetusta Placita, includes numerous passages comparing the sayings of Parmenides, Empedocles, and others on similar topics, such that an excerpator or incautious reader might easily confuse an attribution; see, for example, the opening of Book IV of Aristotle’s De generatione animalium (763b30-765b6), where he shifts back and forth several times between Anaxagoras, Empedocles, Democritus, Leophanes, and his own opinion. If fr. 18 were derived from a sylloge of biological quotations from multiple authors, as implied by its being called an epigramma, the possibility of an omitted or confused attribution is even greater.

Finally, we should note that the context in which Caelius cites this fragment is not to explain gender dysphoria, but same-sex attraction, and in particular to explain why some men even as adults prefer passive anal sex with other men. This makes better sense if we interpret fr. 18.3-6

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26 Cherniss believes the relevance of the uterus’ temperature is in determining whether the father’s or mother’s seed prevails, but this fails to account for the cases where a male offspring may resemble some of his mother’s traits more, or a female offspring her father’s, a phenomenon of which Empedocles was clearly aware (fr. 63 D-K) (Cherniss, Harold F.: Aristotle’s Criticism of Presocratic Philosophy, Baltimore 1935, 277 n.225). As Lesky saw, Empedocles’ theory is clearly quite different from Alcmaeon’s notion of sex being determined by which parent’s seed prevailed, although Aetius V 11.1 could suggest that prevalence of seed determined some traits (Lesky 1951, 33). Blerch, citing Oribasius (apud Athenaeus 3.78.13 = A83 D-K), believes the greater heat of males explains their faster growth rate and higher energy level (Blerch 1937, 35-36).

27 See Lesky 1951, 34.

28 Diogenes also refers to a poem on medicine that was about 600 lines, which could be the source for some of his doctrines on embryology. Inwood argues that the preponderance of evidence favors the Peri Physeos and the Katharmoi merely being alternate titles for the same poem, rather than two separate works (Inwood, Brad: The Poem of Empedocles, Toronto 2001, 9-19). This makes it even more likely that there were multiple books of the same work, since Birt long ago established that books in verse almost never exceeded 2000 lines by Roman times (Birt, Theodor: Das antike Buchwesen in seinem Verhältnis zur Literatur, Berlin 1882, 286-307); the closest generic analogue extant would be Lucretius’ De Rerum Natura, divided into six books, none of which exceeds 1500 lines. Simplicius, Comm. in Phys. 381.29 (citing Empedocles, fr. 62) specifies this fragment as from the “second book” of Empedocles’ Physika; similarly, in citing fr. 96 (Comm. in Phys. 300.19) he says the fragment is from the “first book.”
as an example of Empedoclean strife (attraction of like to like and polarization of opposites). Sons more like their mothers may have sexual desires that more resemble those of their mothers.

Viewed in this context, fr. 18 might fit quite well into Empedocles’ cosmic cycle. Drawing on testimonia such as Aulus Gellius 4.11.9-10, Hippolytus, *Refutation* 7.29.9-30.4, and Plutarch, *De Soll. Anim.* 964D-E, O’Brien (1969, 210) and Inwood (2001, 47-48, 64-67) believe Empedocles regarded his own time as one of waxing strife, and for this reason advised against heterosexual intercourse and marriage as vain attempts to cling to the waning power of Aphrodite. As the empire of Strife expands, one could expect to see more conflict of paternal and maternal seed and as a result more sexually troubled offspring of the sort described in fr. 18.3-6, incapable of reproducing any more than the mules of fr. 92. However, nothing in our testimonia suggests that Empedocles precluded homosexual unions, in which like is drawn to like; indeed, his poem was addressed to his *erōmenos* Pausanias. Pollution did not inhere in sex *per se*, but in generation and childbearing.

It must be observed that hot and cold are not polar absolutes, but subject to an almost infinite degree of variation along the temperature scale. What should we make of the cases where a father’s seed is only slightly warmer or colder than the mother’s seed, or of the cases where both seeds are equally lukewarm? Embryological theories of gender determination based on temperature variation may therefore produce less than clear-cut categorizations of gender, somewhat akin to the “sliding scale” implied in the Hippocratic doctrine with which we began.

Of the later Pre-Socratics Anaxagoras and Democritus we have few relevant fragments, but testimonia in Aristotle and Aetius suggest that both had developed theories of embryology that included accounts of sex selection (59A107-14l; 68A151-52 DK). Like Empedocles, Democritus was interested in the etiology of “monstrous births” and the sterility of hybrid creatures like mules (Aristotle, *De Generatione Animalium* 769b30-770a7). The move toward atomic theory made it easier to understand how particles from both mother and father could mingle in a child to give them traits of both. According to Aristotle, Democritus believed that every part and organ of the body would contribute atomic particles to the semen, a doctrine known as *pangenesis*. Whichever genital particles prevailed would determine the sex of the offspring, but it was entirely possible that different particles would prevail for different organs: in other words, a child with male genitals might have a heart or brain more like his mother’s (Aristotle, *De Generatione Animalium* 764a6-11). Given that ancient thought commonly

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29 How the various life-forms that Empedocles enumerates (separate, but animate limbs in fr. 57, the hybrid monsters of fr. 60-61, the autochthonous and asexual *oulophyeis* of fr. 62, and men and women in their present form) fit into the different stages of his cosmic cycle has been a matter of considerable scholarly discussion. For a good summary of previous views, see O’Brien 1969, 196-203.


31 *Diogenes Laertius* 8.60-61, citing Aristippus and Satyrus as sources. Diogenes also tells us that Pausanias was a physician. Although the Platonic character Pausanias of *Cerameis* (Nails, Debra: *Plato: A Prosopography of Plato and Other Socrates*, Indianapolis 2002, 222), the lover of Agathon, is assumed to be distinct, it is interesting that he is also named as a physician and espouses distinctly Empedoclean doctrines in his speech in Plato’s *Symposium*. For the tradition of biographical sources associating philosophical teachers and their star disciples as pederastic couples, see Meier, Moritz Hermann Eduard/de Pogey-Castries, L.-R.: *Histoire de l’ amour grec dans l’ antiquité*, Paris 1930, 106-57.

32 See Holmes 2012, 43-44.
situated the seat of emotion in bodily organs such as the liver, diaphragm, or spleen, it is therefore possible for one’s sex and emotional constitution to be derived from different parents and quite independent of one another. We can readily deduce from this theory the occurrence of boys with feminine dispositions and girls with masculine traits, but it is unclear whether Democritus actually explored the implications of such combinations. Anaxagoras’ theory of homeomeres, whereby everything and everyone contained tiny particles of everything else, also opens up the potential for an almost infinite degree of combinations of masculine and feminine elements in a person’s body.33

To sum up, early Greek philosophy and medicine did not specifically deal with true intersex individuals, but they did recognize gradations and combinations within the overall dualism of masculine and feminine, what we might call, to borrow a term from Magnus Hirschfeld, *sexuelle Zwischenstufen*.34 Some men resembled their mothers more than their fathers, some women resembled their fathers more than their mothers in behavioral as well as organic features. I would argue that Greek thought of the classical period therefore did imply a nascent distinction between anatomical sex and the complex array of characteristics that we would today call “gender,” and recognized that the former did not always fully correspond with the latter.

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