

Chapter 7

The End of the Republic

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Abstract Virgil first read his *Georgics*, or “farm poem,” to the first Roman emperor, Augustus, on his way back from the battle at Actium – where Augustus had put an end to the Roman republic, and established one-man rule. Virgil’s natural history was bad: he thought that queen bees were kings, among other things. But the point he was making was good. *Communis natos*, he wrote: in Rome, as in *Apis mellifera* hives, sterile workers and soldiers would help raise the young of their emperor, or queen. Like dominant members of eusocial species – bees, ants, wasps, gall thrips, termites, aphids, beetles, sponge-dwelling shrimp, and naked mole-rats – Roman emperors had enormous reproductive success. They had sexual access to hundreds or thousands of women, who may have borne hundreds or thousands of children. And they got help defending their territories, and provisioning their families, from millions of facultatively sterile workers and soldiers, and from thousands of eunuchs – who made up an obligately sterile caste. This example from human history illustrates the unusual flexibility of human reproductive strategies.

7.1 Introduction

Over 2,000 years ago, in September of 31 BC, Gaius Octavius beat Marc Antony in a naval battle at Actium off the coast of Greece. A year later, on his way back to Rome, Octavian stopped to visit his friend Virgil in the south of Italy – where he recited his *Georgics*, or farm poem, for 4 days straight. Virgil’s natural history was bad: he thought queen bees were kings, among other things. But the point he was making was good. Equals would fight to the death, till just one was left on the nest.

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That, Virgil thought, was for the best. In his words: “Slay the weak rebel! bid the usurper bleed! Slay, ‘ere he waste the hive.’ Defend the throne, and let the rightful monarch reign alone.” He put it even better in the *Aeneid* he left on his deathbed: “Spare the submissive, and war down the proud” (Virgil, *Georgics*, 4.89–91, *Aeneid*, 6.852–853).

Virgil grew up on a farm in the north of Italy, the son of a man who greatly increased his little property by buying up woodlands and raising bees; and he devoted the fourth part of his *Georgics* to beekeeping, or apiculture (Suetonius, *Life of Virgil*). After the honeybee fight to the death, Virgil knew something about honeybee peace. As long as their king was alive, the hive was all “of one mind.” Colony members would work for him; they’d fight for him; and they’d raise his young. “*Communis natos*” is how Virgil put it: everybody helped the emperor breed (Virgil, *Georgics*, 4.154–191, Whitfield 1956).

That made them truly social. Almost half a century ago, the term *eusocial* was first used to describe insect societies, in which workers cooperatively care for a monarch’s brood, as members of an obligately sterile caste (Batra 1966; Wilson 1971). Over the last few years, that definition has been expanded to include animals in a variety of taxa – from insects, including bees, ants, wasps, thrips, termites, aphids and beetles, to a sponge-dwelling shrimp, to the East African naked mole-rat. Continuous definitions of eusociality include the wide range of species in which some individuals help care for others’ young, and measure an index of reproductive variance, or “skew” (Gadagkar 1994; Sherman et al. 1995; Lacey and Sherman 2005). Discrete definitions restrict eusociality to the small handful of species with obligately sterile castes (Crespi and Yanega 1995; Costa and Fitzgerald 2005; Crespi 2005). But in practice, these definitions overlap. In societies where some individuals are obligately sterile, reproductive skew will usually be high; in societies without sterile castes, reproductive skew will usually be lower.

In either case, Virgil’s honeybees and Rome after Actium war exhibited some striking parallels. Both *Apis mellifera* hives and the Roman Empire were provisioned and defended with help from obligately sterile workers, or eunuchs – who cared, directly or indirectly, for breeders’ young. And in both honeybee societies and Imperial Rome, reproductive skew was at the high end of the continuum. In *Apis mellifera*, as in most eusocial societies, direct reproduction is restricted to a single queen, and other group members do not breed. In the Roman Empire, direct reproduction was shared, but the emperors had sexual access to hundreds or thousands of women, and thousands of obligately sterile eunuchs never bred. That contributed to a reproductive division of labor, and moved Imperial Rome down the eusocial continuum.

Virgil’s honeybees, *Apis mellifera*, live in colonies of tens of thousands of workers, but produce only about ten queens. The first of those queens to emerge searches the others out and kills them, or is killed herself. Afterwards, the survivor’s tens of thousands of sterile worker daughters clean cells, feed brood, store nectar, forage for pollen, and defend the hive – sacrificing their viscera, and their lives, with their barbed stings. But the queen – which grows up to twice their length, and lives up to 50 times as long – specializes as an egg-laying machine (Michener 1974; Seeley 1985).

In a similar way, Roman emperors systematically had their competitors wiped out; and their empires, like honeybee hives, were provisioned and protected with help from thousands of eunuchs – who made up a sterile caste. The Roman Empire was defended by millions of celibate soldiers; it was supplied by millions of celibate slaves; and it was administered by a *praepositus sacri cubiculi*, a eunuch “set over the emperor’s sacred bedchamber,” and by other eunuchs “more in number than flies around the flocks in spring” by the time the emperors left Rome. But, like *Apis mellifera* queens, Roman emperors specialized as breeders. They had sex with the freeborn women procured by family members and friends, senators, and their praetorian guard; and they had sexual access to hundreds or thousands of slaves.

7.2 Senators, Soldiers, Slaves and a Sterile Caste

Over the 357 years the empire remained in Rome, the distance between subject and emperor increased. Some members of senatorial families who had administered the *res publica*, or republic, were executed under the law of *maiestas*, or treason. And others were punished for being promiscuous, under the “moral laws.” Millions of soldiers were legally barred from marriage; millions of slave men had little access to women. And by the time Roman emperors moved to Constantinople, thousands of eunuchs worked in the civil service, fighting for and providing for the empire as members of a sterile caste.

7.2.1 *Senators*

Augustus was the first to investigate a libel under the *maiestas* law in AD 12 – being “provoked” by the senator Cassius Severus, who’d made sarcastic remarks about the burning of republican books (Tacitus, *Annals*, 1.72). Severus paid for his criticism with an exile to Crete, ending his days on the rock of Seriphos. Others were punished for treasonous acts. As early as 22 BC, Lucius Murena and Fannius Caepio, who’d been suspected of a plot to assassinate Augustus, were “seized by state authority and suffered by law what they’d worked to accomplish by violence” (Velleius, *Compendium*, 2.91). Even under benign emperors, hundreds of subjects were put to death. Occasionally, whole lineages were wiped out (Bauman 1974, 1996; Fig. 7.1).

Overall, the number of dead was nontrivial – though hard to pin down. Even before he became an emperor, in December of 43 BC, Octavian put bounties on the heads of 300 senators and 2,000 knights. Cicero was among the proscribed: hunted down in a thicket on his way to the coast, his head and right hand were cut off (Appian, *Civil Wars*, 4.5, Pliny, *Natural History*, 7.148). Augustus’ step-son, Rome’s second emperor, Tiberius, had bodies – up to 20 a day – thrown on the Stairs of Mourning leading down into the Forum (Suetonius, *Tiberius*, 61).

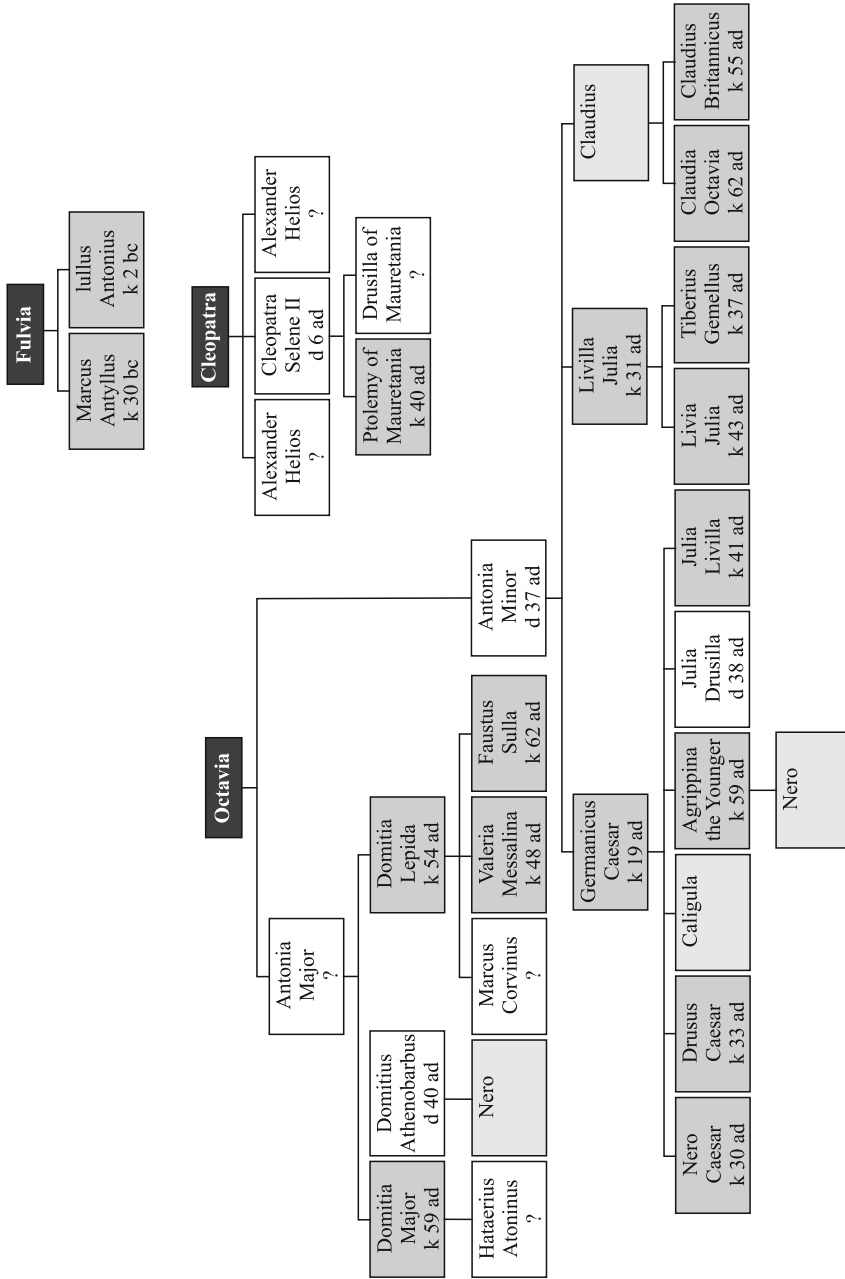


Fig. 7.1 Victims of despotism in Marc Antony's family. Antony had legitimate children by five legitimate wives; many of their descendants were eliminated by Julio-Claudian emperors. See text

And the third emperor, Augustus' great-grandson Caligula, kept lists (*The Dagger* and *The Sword*) of marked subjects, being credited with the remark: "I wish all you Romans had just one neck" (Suetonius, *Gaius*, 50, Seneca, *On Anger*, 3.19). Caligula's uncle Claudius, picked by his soldiers to be Rome's fourth emperor, had up to 300 knights and 35 senators put to death – along with lesser subjects "to the number of the grains of sand and the specks of dust" (Seneca, *Apocolocyntosis*, 13–14, Suetonius, *Claudius*, 29). And the last man in Augustus' dynasty, his great-great-grandson Nero, was arguably the worst: Seneca (the Stoic philosopher, his teacher), Lucan (the poet, and Seneca's nephew), Petronius (the novelist, and Nero's "Arbiter of Taste"), and Thræsea Paetus (another Stoic philosopher) were put to death; after a senatorial conspiracy in AD 65, the flow of blood "fatigued the mind" – though the number of casualties is unknown (Tacitus, *Annals*, 16.16). Victims were accused along with their children, and their relatives were forbidden to mourn (Suetonius, *Tiberius*, 61, *Digest*, 3.2.11.3). As a philosophical emperor would later say, "what is no good for the hive is no good for the bee" (Marcus Aurelius, *Meditations*, 6.54).

The survivors were asked to limit their direct reproduction. One day in 28 BC, wearing a sword and steel corset under his tunic, with ten well-built bodyguards around him, the first emperor persuaded 50 men to withdraw from the senate voluntarily. Then, he "compelled" another 140 to follow their example. Eleven years later, Augustus took another 200 senators off the lists; others were asked to leave, in 11 BC and AD 4 (Syme 1939; Talbert 1984). Many had been politically unfriendly; but others were censored for having too much sex. "On the strength of their own knowledge of their families and their lives, he urged senators to become their own judges."

Augustus did the same to the *equites*, or knights – who were often the richest men in Rome. He "cross-examined" them on their personal affairs: "some, whose lives proved to have been scandalous, were punished; others were only degraded" (Suetonius, *Augustus*, 35, 39, Dio, *History*, 52.42.2).

Augustus' contemporaries were appalled at censors' powers. They invaded "the privacy of our homes"; or, more explicitly, "throwing open every house and extending the authority of the censors even to the bedchamber, they made that office the overseer and guardian of everything that took place in their subjects' houses" (Pliny, *Natural History*, 29.8.18, Dionysius of Halicarnassus, *Roman Antiquities*, 2.15). Other emperors conducted similar purges. Claudius brought back the censorship in AD 47–48, revised the senate and struck knights off the lists – warning a notorious seducer of wives and virgins, "restrain your passions" (Suetonius, *Claudius*, 16). Then, in AD 73–74, Vespasian, with his son Titus beside him, reformed the senate and knights again, removing "undesirable members" and "tightening discipline" (Suetonius, *Vespasian*, 8–9). Domitian made himself perpetual censor (*ensor perpetuus*) in AD 84–85, and started another campaign for "improving public morals": men were sentenced for "unnatural" practices, and women for not being chaste (Suetonius, *Domitian*, 8, Dio, *History*, 67.12.2).

On another day in 28 BC, the first emperor probably tried to pass his first set of "moral laws" – though he seems to have had them repealed. Propertius, the poet,

remembered how he had “rejoiced when that law was lifted”; and Livy, who wrote histories, was not sure whether “corruption or its corrective” was worse (Propertius, *Poems*, 2.7, Livy, *History*, pr.9). At any rate, in around 18 BC, Augustus tried again: his *lex Julia de maritandis ordinibus* encouraged Roman bachelors to get married and raise legitimate children; but his *lex Julia de adulteriis* had convicted adulterers and adulteresses banished to remote islands – with up to half of their property confiscated by the state. Any man who “knowingly” made his house available for adultery was exiled, as if he’d committed adultery himself; and any man who made a profit out of adultery was punished, even if the adulterer was his spouse, “for it is no small crime to have pimped for one’s wife” (Paulus, *Sententiae*, 2.26, *Digest*, 48.5.9, 30, Treggiari 1991).

7.2.2 *Soldiers*

Constraints on direct reproduction were not limited to the senatorial class: for hundreds of years, soldiers’ marriages were banned. The law that soldiers could not “legally have wives” may go back to Augustus: Ovid, the poet, found it odd that the emperor’s legislation should encourage civilian breeders, in order to supply his empire with unmarried soldiers; and Cassius Dio, the senator, dated the law against soldiers’ marriages to Augustus’ reign (Ovid, *Art of Love*, i.113–114, Dio, *History*, 60.24.3).

The Roman Empire, like most empires, was built on conquest. Roman emperors supported millions of soldiers, and many were killed in battle. Some of the survivors had relationships with women, and fathered children. But for centuries, they were legally unable to marry, and their children were considered bastards (Wells 1999).

7.2.3 *Slaves*

There may have been 10 million slaves in a population of 60 million in the whole Roman Empire in Augustus’ time, and none of those slaves had wives (Scheidel in press). As Ulpian, a third-century jurist, summed up: “*Conubium* is the capacity to marry a wife in Roman law”; and “there is no *conubium* with slaves” (*Titulus Ulpiani*, v.3–5, also Gaius, *Institutes*, i.57). Most slave men lived and worked on the farms, or in the mines. In the mines, thousands “never saw the light of day” for months; and they constantly risked being crushed to death. And on the farms, thousands worked in chained gangs – where they were driven by “whips rather than words” in the fields, and slept in “an underground prison, as wholesome as possible,” with light coming in through window slits high enough up that they couldn’t be reached (Pliny, *Natural History*, 33.70, Columella, *On Agriculture*, 1.6.3, 1.8.5). Conditions were not conducive to family life.

But a minority of slaves filled the imperial civil service: the *Familia Caesaris*. They worked from the lowest level to the highest – in menial positions, as footmen (*pedisequi*), watchmen (*custodes*), name callers (*nomenclatores*), or post officers (*tabellarii*); in middle management, as assistants (*adiutores*), archivists (*commentarii*), aides (*vicarii*), or accountants (*tabularii*); and in upper-level cabinet posts, as secretaries of letters (*ab epistulis*), secretaries of documents (*a studiis*), secretaries of petitions (*a libellis*), and secretaries of finance (*a rationibus*). The names of over 4,000 imperial slaves and freed slaves survive on Roman tombs (Weaver 1972). By the end of Augustus' dynasty, the emperor was so close to a slave that Rome became a “slave to two emperors” at once; and by the end of the next dynasty, “most emperors, though masters of their subjects, were the slaves of their freed slaves” (Dio, *History*, 62.12.2, Pliny, *Panegyric*, 88). Some of those slaves had relationships with women, and fathered illegitimate children – who might, like their fathers, have ended up in the *Familia Caesaris* (Rawson 1966; Weaver 1972).

7.2.4 A Sterile Caste

Early Roman emperors filled their bureaucracies with “outcasts” – with foreigners and the poor, or people who lacked important ancestors. Later emperors promoted “dry trees” – or people who lacked sons, or a sterile caste (Isaiah 56: 3–8, Betzig 2005, 2008).

By the end of three centuries, the imperial civil service was filled with eunuchs. Even Maecenas – who patronized Virgil, and worked as a regent for Augustus – was “attended in public” by a pair of *eunuchi*; and even Livia, who was Augustus' last wife, buried a *rarius eunuchus*, along with another half dozen *cubicularii* – bedchamber attendants, customarily castrated – in her family tomb (Seneca, *Moral Letters*, 114, Dunlap 1924). Some *cubicularii* specialized as “workers,” and others as “soldiers”: they advised emperors on foreign affairs; or were honored at triumphs after foreign wars (Philo of Alexandria, *Embassy to Gaius*, 27.175, Suetonius, *Claudius*, 28).

But there were more of them, and they were more important, as time went on. By the end of the first century, there were “troops of eunuchs” at the imperial court; and by the end of the second century, a hundred castrated Roman citizens waited on an emperor's wife (Suetonius, *Titus*, 7, Dio, *History*, 76.14). By the end of the third century, the empire was administered by a *praepositus sacri cubiculi* – the eunuch “set over an emperor's sacred bedchamber”; and by the fourth century, after Constantine moved the capital to Constantinople, the emperor was surrounded by a thousand cooks, as many barbers and more butlers, a swarm of waiters, and “eunuchs more in number than flies around the flocks in spring” (Malalas, *Chronicle*, 339, Libanius, *Orationes*, 18.130). *Castrensi* managed the imperial bodyguard, properties, movables, and treasury (Hopkins 1963; Jones 1964). Eventually, 8 out of 18 administrative ranks were reserved for eunuchs, who consistently outranked

the “bearded” civil service (Constantine VII Porphyrogenitus, *On Ceremonies*, 2.52, Tougher 2002, 2008).

Remnants of the senatorial class disapproved. Eunuchs were all “extortionate or despicable” lizards and toads: subservient to their masters, insolent to everybody else (Ammianus Marcellinus, *Roman History*, 16.7.8, Basil of Caesarea, *Letter* 115).

7.3 Emperors

Emperors, on the other hand, bred. Roman emperors married just one, legitimate wife at a time; but they had sex with as many women as they could afford (Betzig 1986, 1992a, b, 1993). Some of those women were freeborn Roman citizens (Syme 1960); but many of those women were slaves (Scheidel 2009). Friends, family members, senators, and his praetorian guard brought freeborn wives and daughters to the imperial bed. And on the side, Roman emperors had sexual access to hundreds or thousands of slaves, whose daughters and sons – *vernae*, or homeborn slaves – filled Latin law, literature, and the imperial civil service: the *Familia Caesaris*.

7.3.1 Free Women

Even his friends admitted that Augustus was an adulterer. But they justified it: “he attracted many women by his comeliness and high lineage.” Besides, he had sex “for reasons of state”: he was trying to find out what his enemies were up to by getting intimate with their daughters or wives – who were stripped of their clothes, “and inspected as though they were for sale” (Nicolaus of Damascus, *Life of Augustus*, 5, Suetonius, *Augustus*, 69).

Other emperors were provided for by senators, bodyguards, family members, and slaves. Tiberius got help from his slaves. Rummaging through the streets of Rome for freeborn daughters and sons, they “rewarded compliance, overbore reluctance with menaces, and – if resisted by parents or relations – kidnapped their victims, and violated them on their own account” (Tacitus, *Annals*, 6.10). Caligula abused his senate, asking legislators to dinner, and taking their wives to bed, then coming back to announce in a loud voice “how they’d behaved in sexual intercourse” (Seneca, *On Constancy*, 17.2). Claudius, who was sickly, depended on his family – like his mother and his grandmother, who put girls in his bed to satisfy his “healthy” appetite for sex (Dio, *History*, 60.2.4–6). And Nero relied on his praetorian guard. His praetorian prefect, Tigellinus, had a raft towed by gold and ivory boats floated in the Campus Martius on Marcus Agrippa’s lake: brothels were set up for high-ranking ladies (“the most beautiful and distinguished in the city”), and whores (“naked prostitutes, indecently posturing and gesturing”) were lined up on the quays (Suetonius, *Nero*, 27).

7.3.2 *Slave Women*

Mostly though, emperors had sex with their slaves (see Tables 7.1–7.3). There were an estimated 6 million slaves in a population of 60 million in the whole Roman Empire by the Augustus' time, and most of them were owned by rich women and men (Scheidel 2009). Great, late republican families saved places for 204, 634, and 652 household slaves in their family tombs, and roughly a third had female names (Treggiari 1975; Saller and Shaw 1984). Many were good looking or young: ages of female slaves ranged from 4 to 35 at time of sale – with a ripe median of around 19; and slaves of “good appearance” cost more (Bradley 1978, Suetonius, *Caesar* 47).

They were expected to be fertile. In legal sources, buyers were due a refund if a slave menstruated twice a month, or never menstruated at all; if she regularly produced “stillborn issue,” or was “so doctored that she cannot fulfill the function

Table 7.1 Sex ratios of slaves on Roman tombs. After Treggiari 1975 (Volusii, Statilii, Liviae), Weaver 1972 (Familia Caesaris), and Rawson 1986 (Alumnae, Vernae)

Sample	Ratio of ♀ = Slaves (% ♂)
Volusii family	129:75 (63.2%)
Statilii family	421:213 (66.4%)
Monumentum Liviae	440:212 (67.5%)
Familia Caesaris	3,325:291 (92.0%)
Alumnae	276:139 (66.5%)
Vernae	381:183 (67.6%)

Table 7.2 Ages of *ancillae*, or female slaves, at time of sale, as listed on Egyptian papyri. After Bradley 1978

Range of ages	Number (%) of Ancillae
<5	1 (3.4%)
5–9	3 (10.3%)
10–14	5 (17.2%)
15–19	5 (17.2%)
20–24	7 (24.1%)
25–29	4 (13.8%)
30–35	4 (13.8%)

Table 7.3 Ages of *vernae*, or homeborn slaves, on inscriptions from Roman tombs. Because *vernae* who were commemorated on tombs died young, the implication is that the status of those who survived changed early to liberty, or freed slaves. After Rawson 1986

Range of ages	Number (%) of <i>Vernae</i>
<5	103 (32.0%)
5–9	100 (31.1%)
10–14	48 (14.9%)
15–19	34 (10.6%)
20–24	17 (5.3%)
25–29	9 (2.8%)
30–100	11 (3.3%)

of a woman” – as it was “the highest and particular lot of woman to conceive and conserve what she conceives.” On the other hand, a slave woman could be emancipated for giving birth to three children, or “if the first child she bears is male”; and it was considered “a good reason for manumission where, for instance, anyone offers for manumission before the council a natural son or daughter” (*Digest*, 1.5.15, 21.1.14–15, 35.5.10, Gaius, *Institutes*, i.19). Three out of four Roman epitaphs belong to a freed slave, and *vernae* – the “homeborn” children born on their masters’ estates, to their masters’ slave women – were most likely to be freed (Taylor 1961; Hopkins 1978). *Vernae* were brought up in *paedagogia* along with their masters’ legitimate children, attended by the same hairdressers (*ornatrici*), anointers (*unctores*), teachers (*praeceptori*), and doctors (*iatroliptae*) (Rawson 1986; Bradley 1991). They often grew up to become knights, or sat in the senate; and hundreds of *Augusta vernae* worked in the civil service (Tacitus, *Annals*, 13.27, Weaver 1972).

7.3.3 *Genius*

Early in 44 BC, just months before the Ides of March, Julius Caesar was voted “Father of his Country” by his senate, and the inscription *pater patriae* was inscribed onto Roman coins (Suetonius, *Caesar*, 76, Dio, *History*, 44.4.4). Rumors circulated about Caesar after the Ides of March, to the effect that members of the senate had “actually ventured to suggest permitting him to have intercourse with as many women as he pleased, because even at this time, though 50 years old, he still had numerous mistresses.” Helvius Cinna, the people’s representative, or tribune, was supposed to have drawn up a bill for the commons to pass while Caesar was out of town, “legitimizing his marriage with any woman, or women, he pleased, ‘for the procreation of children’” (Dio, *History*, 44.7.3, Suetonius, *Caesar*, 52). And within days after Caesar was butchered in the senate, Cinna was supposed to have been torn, limb from limb, by a crowd of angry men (Plutarch, *Caesar*, 68). But others paid tribute to Caesar. They set up an altar in his honor, and raised a 6-m column of Numidian marble in the Forum, with “To the Father of His Country” written on the bottom (Appian, *Civil Wars*, 1.4, Suetonius, *Caesar*, 85). Cicero’s son-in-law, Dolabella, had that column leveled, and made sure the masses that gathered to make sacrifices were slaughtered. “Debauched and wicked free men” were thrown down from the Tarpeian Rock; and “audacious and rascally slaves” were hung up on crosses. As Cicero bragged to his friend Atticus, on May 1st: “Away with the pillar! Contract for paving the site!” (Cicero, *Ad Atticus*, 14.15, *Philippics*, 1.5, Gelzer 1968).

On a pair of bronze pillars outside his enormous, 90-m diameter, mausoleum in Rome, Augustus inscribed his *Res Gestae*, or “History of His Reign.” The first emperor was proud to be remembered for having served as a *triumvir*, a senator

Fig. 7.2 A coin issued under emperor Maximinus II, a contemporary of Constantine the Great. The naked emperor holds a cornucopia in his left hand, and the head of Serapis – an Egyptian fertility god – in his right. The inscription reads *genio augusti*, in honor of the emperor’s genius



and a censor, but he may have been proudest of the last accomplishment on his list – having been voted *pater patriae*, or “Father of his Country,” by his subjects (*Res Gestae*, 35). Tiberius was offered that honor in the first year of his reign, but in spite of “repeated popular pressure,” he turned it down (Tacitus, *Annals*, 1.72).

Caligula, Claudius, and Nero, all capitulated in their first 12 months – though they all declined the epithet at first, in Nero’s case, “because of his youth.” In later dynasties, *pater patriae* was a commonplace honor – in literature, on coins, and in architecture (Suetonius, *Nero*, 8, Gradel 2004).

In the months before March 15th, when the senate was voting excessive honors for Julius Caesar, they decided that public prayers should be offered every year on his behalf, and that people should “swear by” Caesar’s *genius* (Dio, *History*, 44.6.1). They had to do the same for Augustus. Romans had always made sacrifices to the *genius*, or generative power, of the heads of their families, or *gens*; now they would make the same sacrifices to their head of state (Fig. 7.2). When a family’s household deities, or Lares, were put out to “feed from the dish,” the first emperor was offered the same wine cup; and when a farmer came home from his field to food and wine, he invoked Augustus “as a god,” along with his Lares, and offered the emperor prayers (Ovid, *Fasti*, 2, February 22, Horace, *Odes*, 4.5). Tiberius vetoed bills for the dedication of priests and temples to his divinity, and decided not to allow subjects to swear by his generative power – though “if anybody after swearing by it incurred the charge of perjury, he would not prosecute him”; but Caligula had subjects boxed up in small cages or sawn in half, for “failing to swear by his *genius*” (Suetonius, *Tiberius*, 26, *Gaius*, 27, Dio, *History*, 57.8.3, 58.2.8, 59.4.4). Bulls were sacrificed on public altars to the *genius* of Nero, and other emperors, in order to ensure the harvests; and coins, covered with cornucopia, were issued in honor of *genio augusti*, or the emperors’ *genius* (Fishwick 1987; Gradel 2004). But people were thrown to wild beasts in arenas, or consumed by fire, for failing to “swear by the *genius* of Caesar,” for nearly 300 years (*Acts of Polycarp*, 9 and *Acts of Perpetua*, 6 by Musurillo 1972).

7.4 Reproductive Skew

For more than 300 years after Augustus became the first emperor of the West, proud Roman subjects were put in their place – with respect to politics, and with respect to sex. They were relegated to remote islands, or killed, for offending the majesty of the emperor, under the law of *maiestas*. And they were thrown out of Rome, or removed from the senatorial and equestrian orders, for being promiscuous, under the censorship or *lex Iulia de adulteriis*. They were expected to worship the emperors as *divi Iulii*, or gods; and they were turned into human torches, or thrown to wild animals in the circus, for failing to make sacrifices to the emperor’s generative power, or *genius*.

The Roman Empire, like an *Apis mellifera* colony, exhibited many parallels with eusocial animals. There was a reproductive division of labor, with eunuchs helping to care for the emperor’s freeborn and slave born children. And as a result, reproductive skew was high. Like social insects – from bees, to ants, to wasps (Wilson 1971), to gall thrips (Crespi 1992), to termites (Thorne 1997), to aphids (Aoki 1977), to beetles (Kent and Simpson 1992), like at least one crustacean – *Synalpheus regalis*, the sponge-dwelling shrimp (Duffy 1996), and like at least one other social mammal – *Heterocephalus glaber*, the naked mole-rat (Jarvis 1981), Roman emperors specialized as breeders. They had sexual access to hundreds or thousands of women, who may have borne hundreds or thousands of children. And they got help defending their territories, and provisioning their families, from the hundreds or thousands of workers and soldiers who made up an obligately sterile caste.

For the more than 100,000 years of *H. sapiens* prehistory, reproductive skew was low. In most cases, successful foragers raised roughly twice as many children as average foragers; but most foragers managed to become parents (Hill and Hurtado 1996; Smith 2004). Like many insects, some birds and a handful of mammals including primates, hunters, and gatherers have always been cooperative breeders: adults, especially, closely related adults, have helped one other feed and protect their broods. But – with the exception of postmenopausal women, who have helped raise their own grandchildren – they have lacked an obligately sterile caste (Foster and Ratnieks 2005; Hrdy 2005).

This changed around 10,000 years ago, with the origin of farming. By the time the first historical records were being kept in the Ancient Near East, “beardless” attendants were waiting on “bearded” kings – who collected large numbers of *lukurs* (or “king’s fallow,” or virgins) and *nins* (or “queens”), and left surviving records of dozens of sons and daughters (Postgate 1994; Grayson 1995). In Old Kingdom Egypt, the desert god Seth, whose testicles have become “impotent,” helps administer the empire for pharaoh; and in the New Kingdom, the names of 49 *sons* – generals, hereditary counts, chiefs of secrets, scribes – survive from Rameses II reign, along with another 111 unnamed *sons* (Fisher 2001; Allen 2005). In the Sanskrit of India’s early imperial dynasties, the Maurya and Gupta, emperors are waited on by “third genders”; and harem women are taught to hold an emperor’s

interest by speaking multilingually and talking to parrots, “even though he may have thousands of other women” (Shamasastri 1951; Burton 1979). In China, in the 2nd millennium BC, there are *huan guan* – court officers, customarily castrated – on Shang dynasty oracle bones; by the 2nd millennium AD, there were a record 100,000 Ming Dynasty eunuchs, and a Sui Dynasty emperor kept a record 100,000 women (Tsai 1996; Ebrey 2003). Across Old World empires including Rome, eunuchs oversaw administration and commanded armies. But emperors specialized as breeding machines.

What accounts for the change? In any society, reproductive skew is expected to increase: (1) as the genetic relatedness of group members goes up; (2) as the social benefits of group membership go up; and (3) as ecological constraints on dispersal increase (Vehrencamp 1983a, b; Emlen 1995).

In eusocial species, relatedness lowers the costs of helping (Hamilton 1964, 1972). And as expected, average relatedness in most skewed societies is high. In the *Hymenoptera*, including *Apis mellifera*, haplodiploidy makes full sister bees, ants, and wasps more closely related than mothers and daughters; so helping is favored (Hughes et al. 2008). But in haplodiploid colonies where queens are inseminated more than once, or in colonies with more than one queen, relatedness is not enough to explain the existence of sterile castes (Keller 1993). And kinship is an inadequate explanation for eusociality in diploid species – from termites, to aphids, to beetles, to shrimp, to naked mole-rats.

Social benefits – including cooperative foraging, and cooperative defense – can also raise reproductive skew. Among other things, group members may benefit each other as sentinels or fighters, groomers or hunters; and some may be willing to limit direct reproduction, and to help others reproduce, as a result (Clutton-Brock 2006). But in many social species, altruism is not voluntary, but enforced: breeders often punish or evict nonbreeders who fail to help (Ratnieks and Wenseleers 2008). Again, that has often been the case in human groups.

Strong evidence suggests that reproductive skew is often a response to ecological constraints. Ecological benefits – including habitats safe from predation, and with plenty of food – may compensate nonbreeders for becoming nepotists (Emlen 1982, 1997). Eusocial species take advantage of resource patches across taxa – from insects, to crustaceans, to mammals (Jarvis et al. 1994; Duffy 1996; Thorne 1997). Societies tend to colonize discrete nesting sites in sharply delineated habitats – from decaying logs, to sponge cavities on coral reefs, to 30 kg tubers dispersed in arid ground. The fact that eusocial species “dominate the central, more stable areas of habitats,” while solitary species “flourish in the peripheral, more ephemeral areas,” (Wilson and Hölldobler 2005) may indicate that high skew is often an *effect*, rather than a *cause*, of finding a good food source. For *H. sapiens*, that seems to have been the case.

Most civilizations have probably risen up as an effect of ecological constraints. Before sedentary societies spread with agriculture, reproductive skew in most foraging societies was low. But around the Old World – from Sumerian and later civilizations on the Tigris and Euphrates, to the Egyptian civilization that lasted for millennia on the Nile, to Harappan civilization on the Indus, to the Shang and

later dynasties on the Yellow River and its tributaries, to Rome – every ancient empire began on “*areas of circumscribed agricultural land*” (Carneiro 1970, 1986). A small minority of men collected up to 100,000 women, and up to 100,000 eunuchs filled sterile castes.

Acknowledgments I thank my old friend, Bernie Crespi, for help with evolutionary biology; and I thank my old friend, Walter Scheidel, for help with Roman history.

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