

CHAPTER 2

MEDEA'S CAULDRON OF REJUVENATION

IN THE FURTHER adventures of Jason and the Argonauts, the sorceress Medea again came to their rescue. After capturing the Golden Fleece and overcoming Talos on Crete, the Argonauts sailed home to Greece with the precious Fleece. Jason looked forward to returning to Iolcos, his hometown in Thessaly. But he found his rightful kingdom in the hands of his uncle Pelias. It was the power-mad Pelias who had commanded Jason to undertake the daunting expedition in the first place, assuming Jason would never return alive to claim the throne. Now, back in Iolcos, Jason mourned how frail his aged father, Aeson, had become.

Jason asked Medea to restore his father's youthful vigor by transferring some of his own allotted years to Aeson. But Medea rejected the notion of reducing Jason's lifespan to increase Aeson's. She chided Jason that such an exchange would be unfair, unreasonable, and disallowed by the gods. Instead she decided to try to make the old man young again through her own arcane arts.¹

Medea's mission to revivify Aeson provides a quintessential example of mythical *biotechne* to bring about unnaturally extended life, a form of artificial human enhancement. The many different versions of this myth speculate, in folklore terms, on how one might reverse aging and increase natural life expectancy not only by casting a magical spell, but by employing certain techniques, procedures, special equipment, *pharmaka* (drugs), and therapeutic infusions.

The story of Aeson's miraculous rejuvenation by Medea's witchcraft and *pharmaka* is very old. We know that the episode was described in the *Nostoi (Returns)*, a Greek saga based on a collection of archaic oral

traditions about the aftermath of the legendary Trojan War, set in the Bronze Age. These old tales were first written down in epic form in the seventh or sixth century BC. Sadly, the full poem no longer survives. In the incomplete *Nostoi* text, however, we do learn that Medea “made Aeson a young man in his prime, stripping off his old age . . . by boiling quantities of *pharmaka* in golden cauldrons.” Some ancient accounts say Medea placed Aeson himself in the kettle.²

According to a fragment of a lost play by Aeschylus (*Nurses of Dionysus*, fifth century BC), Medea also rejuvenated the god Dionysus’s human nursemaids and their husbands by boiling them in a gold cauldron. In the fourth century BC, a contemporary of Aristotle named Palaephatus (43 *Medea*) floated a practical, if strained, “rational” explanation for the myths of Medea’s rejuvenation of Aeson, Pelias, and others. Medea, he suggested, was a real woman who had discovered new, secret ways for men to seem younger. She invented invigorating steam baths created by boiling water, but the hot vapor was fatal for feeble old men. In Palaephatus’s theory, it was the secrecy surrounding Medea’s youth-giving therapy that led to the mythic traditions about her wondrous cauldron.³

At any rate, a great many writers and artists, from antiquity to modern times, retold the popular myth in dramatic imagery, depicting the witch Medea combining magical rituals with mysterious biomedical methods to reinvigorate old men.

In the literary version of the myth recounted by the poet Ovid (b. 43 BC), Medea devised the rejuvenation experiment as an audacious test of her own powers of medico-sorcery. She used a cryptic *biotechne* procedure reminiscent of her bloodletting operation on the bronze robot Talos (chapter 1). In this case, however, Medea drew all the blood from old Aeson’s veins and then replaced it with a secret concoction of health-giving plant juices and other ingredients, brewed in her special vessels made of gold. Gold was recognized in antiquity to be a nontarnishing metal uncorrupted by chemical and metallic mixtures. After Medea’s operation, Aeson’s renewed energy and glowing vitality amazed everyone. Historians of surgery have pointed out that Medea’s imaginary experiment presages modern blood transfusions, especially exchange or substitution transfusion, whereby a patient is exsanguinated and the blood replaced with donor’s blood. Since 2005, for example, blood exchange experiments between young and old mice have been shown to rejuvenate the muscles and livers of the older ones.⁴



The myth of Jason and Medea in Iolcos continued with the usurper Pelias murdering members of Jason's family. In a malicious reversal of Medea's restorative blood work for Jason's old father, the evil Pelias compelled Aeson to commit suicide by drinking blood, specifically the blood of a bull or ox. In antiquity, some historical individuals—including the Athenian politician Themistocles (d. 459 BC), the Egyptian pharaoh Psammeticus (Psamtik III, d. 525 BC), and King Midas (d. ca. 676 BC)—were said to have killed themselves by drinking bull's blood.

Why bull's blood? Notably, in his treatises on anatomy written in the fourth century BC, Aristotle reported that among all animals, bull or ox blood is the quickest to congeal. Aristotle also remarked that blood flowing from the lower body of an old ox is especially dark and thick (*History of Animals* 3.19, *Parts of Animals* 2.4). It seems that the ancient myth of Aeson's demise and the historians' reports of death by drinking bull's blood expressed traditional folk knowledge of the relatively high coagulation factor of ox blood, an effect later affirmed by Aristotle. In the myth, Pelias forced Aeson to choke to death on clotted ox blood. This ancient motif has an interesting modern parallel. Bovine thrombin (blood-clotting enzyme) has been used in modern surgery since the late 1800s. It also carries risks of fatal cross-reactions in humans.⁵



After eliminating Aeson, Pelias was determined to kill Jason and his companions. The Argonauts and their allies, greatly outnumbered by Pelias's army, were thrown into uncertainty. How could they possibly avoid death and avenge the murders of Jason's father and family?

Medea stepped forward and declared that she herself would slay King Pelias for his crimes.

Success would depend upon Medea's witchcraft, her *pharmaka* of marvelous potency, a masterful sleight of hand, and her ability to convince enemies that she could really manipulate life and death in their favor. Medea's scheme would also involve bloodletting. Her plan was cunning, but it required multiple complicated steps. The ancient versions of this myth about Medea's plot to kill Pelias are also complicated. We must piece together what survives from fragments and try

to reconcile ambiguities in the literary sources and various artistic illustrations. Details do not always agree, evidence that many alternative versions once circulated. But the main thread of Medea's rejuvenation of Aeson and other mythic figures provides evidence that the idea of artificially controlling normal aging and extending life by combining magic arts and medicine to enhance human physiology arose at a very early date.



Medea's murder plot relied on Pelias's belief that Medea really had turned back aging and made Jason's elderly father, Aeson, young again by means of her mysterious golden Cauldron of Rejuvenation. Medea's first step in her plot was to fill a hollow bronze statue of the goddess Artemis with drugs of diverse effects. Medea had received a cache of powerful *pharmaka* from her aunt Circe, the sorceress in Homer's *Odyssey*, and from Hekate, the goddess of black magic.⁶ This venture would be another a test of her powers. Medea told Jason that she had never before used these drugs on humans.

Next, Medea disguised herself as an old priestess of Artemis, using some of her drugs to take on the appearance of a stooped, wrinkled crone. At dawn in the guise of an old hag, Medea carried the statue of Artemis into the public square of Iolcos. Pretending to be entranced, under the influence of the goddess, Medea declared that Artemis had come to bestow honor and fortune on the king. Blustering her way into the royal palace, Medea dazzled King Pelias and his daughters, convincing them that the goddess Artemis was there in person to bless Pelias "forever and ever." Medea may have used drugs and hypnosis to cause them to hallucinate an image of the goddess Artemis, or, as Christopher Faraone speculates, the portable statue may have been animated in some fashion.⁷ The king and his daughters heard the old priestess cry out: *Artemis commands me to use my extraordinary powers to banish your old age and make your body young and vigorous again!*

Pelias and his daughters knew about the magical rejuvenation of Jason's father, and now the goddess seemed to promise everlasting youth for Pelias too. To prove her expertise, the old priestess called for a basin of pure water and withdrew, locking herself in a small chamber. To their



FIG. 2.1 (PLATE 5). Medea, looking back at old Pelias (left), waves her hand over the ram in the cauldron. Jason places a log on the fire, and Pelias's daughter, right, gestures in wonder. Attic black-figure hydria, Leagros Group, 510–500 BC, inv. 1843,1103.59. © The Trustees of the British Museum.

astonishment, when Medea stepped from the room, the ugly crone had transformed into a beautiful young woman. Medea promised to show Pelias's daughters how to do something similar for their elderly father.⁸

Spellbound, Pelias instructed his daughters to carry out whatever Medea commanded them to do to his body, no matter how strange it seemed. Medea invited the young women to observe a demonstration of her secret formula. They were to repeat the process exactly with their father.

In the palace, Medea recites incantations in her exotic tongue. She sprinkles the *pharmaka* from the hollow bronze statue of Artemis into her special cauldron. The daughters see Medea slit the throat of an old ram. She cuts it up and places its dismembered body in her boiling kettle. Abracadabra! A frisky young lamb magically appears!

The gullible daughters hurry away to carry out the awesome wizardry with their aged father, Pelias. Repeating the magic words, they cut their father's throat, hack up his body, and submerge him in a large pot of boiling water. Needless to say, Pelias does not emerge from the pot.⁹



Rams, lambs, and cauldrons figure in all of the literary and artistic versions of Medea's rejuvenation tales. The popularity of the motifs in Greek, Roman, and later European art shows how widespread was the fascination with the rejuvenation theme. In fifth-century BC Athens, Pelias's gruesome death at the hands of his daughters was featured in the great wall paintings illustrating Jason's adventures by the renowned artist Mikon. Mikon inscribed the names of the daughters beside their images in the Anakeion (the Temple of Castor and Pollux in Athens, Pausanias 8.11.3).

But the story of Medea's marvelous cauldron was already a very popular subject for vase painters and their customers as early as the sixth century BC.¹⁰ Several vase paintings from about 510–500 BC show Medea bringing a ram back to life while Pelias and his daughters watch. A particularly lively example (fig. 2.1, plate 5) shows Medea waving her hand over a ram in the large cauldron. She looks back at Pelias, with a white beard and staff, who is watching intently. We see Jason placing a log under the pot, while Pelias's daughter looks on and gestures in wonder.



FIG. 2.2. Medea demonstrates the rejuvenation of a ram for Pelias, red-figure vase, about 470 BC, from Vulci, GR 1843,1103.76. © The Trustees of the British Museum / Art Resource, NY.

In a typical scene painted on a large wine jug (fifth century BC), Pelias's daughter leads him by the hand toward Medea and her cauldron with a ram inside. Another vase (470 BC, fig. 2.2) shows the ram in the kettle between Medea and Pelias. A Roman copy of a Greek marble relief of about 480–420 BC shows Pelias's daughters setting up the cauldron for Medea, who is about to open her casket of *pharmaka* (fig. 2.3). The Etruscans were also fascinated by the



FIG. 2.3. Medea with the daughters of Pelias, preparing the cauldron, Roman copy of a fifth-century BC Greek marble relief, Sk 925. Bpk Bildagentur / Antikensammlung, Staatliche Museen, Berlin, photo by Jürgen Liepe / Art Resource, NY.

rejuvenation tale. A bronze mirror of the fourth century BC (fig. 2.4) shows Medea reassuringly touching the hand of an old man seated with a staff (Pelias?), while Jason places his arm around him encouragingly. A young man (Jason's old father, Aeson, rejuvenated?) emerges from a cauldron. Another woman (Pelias's daughter?) leans over Medea's shoulder, making eye contact with the old man.



FIG. 2.4. Medea and Jason reassure an old man with staff (Pelias?), as a younger man (Aeson rejuvenated?) emerges from the cauldron. Etruscan bronze mirror, fourth century BC, Cabinet de Médailles, Paris, 1329. Drawing by Michele Angel.

In an ominous scene painted about 440 BC, one daughter looks thoughtful as another helps the frail old Pelias to rise from his chair, while the third daughter waits behind a large cauldron, beckoning him and hiding a large knife by her side.¹¹ Yet another skillful artist painted a suspenseful scene that works as a kind of animated filmstrip around the sides of a red-figure jewelry box (fig. 2.5). Turning the box in one's hands, the viewer sees Medea carrying a sword and leading a ram toward her cauldron while Pelias's daughter beckons to her white-haired father, Pelias, who approaches Medea from the other side, leaning on his walking stick.



FIG. 2.5. The aged Pelias approaches Medea's cauldron, encouraged by his daughter. Medea beckons, while holding a sword by her side. Red-figure pyxis, late fifth century BC. Louvre. Erich Lessing / Art Resource, NY.



The ram-and-lamb motif in Medea's mytho-scientific process prefigures a modern scientific milestone involving sheep. In effect, Medea caused a young lamb to emerge from her vat of *pharmaka* mixed with the DNA of an old ram. Oddly enough, the first cloned mammal to achieve fame in popular culture was a sheep. Dolly, the genetically engineered lamb, began life in a test tube, nurtured in a growth medium "soup" in a laboratory experiment in 1996. Dolly's life ended at age six, half the life span of natural sheep and the same age as her genetic mother's cells, raising concerns that cloned animals might be destined to age and die prematurely. By 2017, scientists were able to create an artificial womb filled with man-made amniotic fluid to sustain a living lamb fetus and by 2018 they grew human cells in genetically modified sheep embryos.¹²

Cloning, genetic engineering, and artificial life-support systems have advanced apace since Dolly, of course. In the myth, Medea started with sheep and moved to human trials, paralleling the common trajectory of modern science. (The heart and lungs of sheep are about the same size and shape as human organs, which would have been noticed by the ancient Greeks.) Since 1996, many more mammal species, including primates, have been successfully cloned.

Meanwhile, the anxious ambivalence summoned by the idea of artificially meddling in the most basic natural processes of life, especially of human beings, persists. The ancient message of Medea's bold schemes to interfere with natural aging and death reverberates over the centuries. Pelias's daughters expected to recover their father's youth, as Medea's experiment appeared to promise. But they failed, horribly, to reproduce the desired results, because Medea had deliberately left out the crucial step of replacing Pelias's blood. The lurid ancient tale blurs the boundaries between charlatanism and science and deftly links the conflicting emotions of hope and horror. Hope and horror still coexist in modern Western reactions to "playing god" with science.¹³



Jason and Medea's relationship ended tragically, with Jason breaking his vows to her and Medea killing their children. Abandoning Jason, Medea escaped in her dragon chariot to other intrepid adventures. A hero but not immortal, Jason grew old and died a lonely death, crushed in his sleep by a falling timber from his rotting ship, *Argo*.

What about Medea? Was she mortal or immortal? Her ancestry might suggest that she transcended mortality. As the granddaughter of the sun god Helios and a sea nymph, Medea boasted a semidivine genealogy. In the world of myth, however, semidivine beings and demigods, nymphs, Nereids, monsters, Titans, giants, and sorceresses like Medea and Circe seem to exist in a netherworld between immortality and mortality. Medea was sometimes viewed as mortal, yet she was also portrayed as immortal and ageless. No mythic account describes her demise.¹⁴

In Greek myth, divinities could mate with humans, but their offspring were usually destined to perish. Medea, like many other mothers in Greek mythology, tried but failed to make her own children immortal (Pausanias 2.3.11). Yet the gods and goddesses had the power to grant everlasting life to some special humans. The Trojan boy Ganymede, for example, was abducted by Zeus's Eagle and taken up to Mount Olympus, the abode of the gods, where he remained forever young, thanks to a diet of ambrosia and nectar. And Zeus allowed the dying hero Heracles, his son by the mortal woman Alcmene, to ascend to heaven, where he was fed ambrosia, became immortal, and married Hebe, the goddess of

youth (chapter 3). In another myth, Heracles's nephew, the old hero and Argonaut Iolaus, prays to Hebe and Zeus to restore his glorious youth for just one day so that he might defeat his enemy in battle. A similar tale was told about the warrior Protesilaus, who was permitted to return for one day to make love with his wife (chapter 6).¹⁵

Gods and goddesses never died, and they never aged either. Agelessness and immortality are closely intertwined, but they could be mutable concepts in mythology. Who besides the undying deities had ichor flowing in their veins? As we saw in chapter 1, Hephaestus gave the bronze automaton Talos ichor, but it could not guarantee his invincibility. In myth, the divine power of ichor could be transmitted to some living things too, such as plants, and even to humans, but its special effects were only temporary (see chapter 3).

In Ovid's recounting of the rejuvenation of Aeson, Medea admonishes Jason that his request to transfer years from his own life to his father was unreasonable and forbidden.¹⁶ But Jason's request did have precedent. In the realm of myth, immortality could sometimes be shared, even traded away. For example, Heracles negotiated a bargain with Zeus to exchange the immortality of the centaur Chiron for the life of Prometheus, who was chained to a rock for stealing divine fire.¹⁷

And consider the confusing situation of the Dioscuri, the twins Castor and Pollux, who accompanied Jason on the *Argo* in the quest for the Golden Fleece. Mythographers could not decide whether the brothers were immortal or "half-mortal." The uncertainty arose with good reason. Their mother, Leda, was human, but Pollux was fathered by Zeus, while Castor's father was Tyndareus, a Spartan king. The novel idea of twins with different fathers posed a puzzle of mortal versus immortal bloodlines for people to ponder in antiquity. Oddly enough, the notion of twins with different paternity was not just a fantasy or plot contrivance. When two different males sire fraternal twins in the same ovulation cycle, the scientific term is *heteropaternal superfecundation*. It happens in dogs, cats, and other mammals, even including, albeit rarely, humans. Mammals can also be subject to *superfecitation*, when a second ovum is fertilized while a female is already pregnant, although live human births of this kind are extremely rare because of the different rates of embryo development. The ancients were familiar with these processes, which were discussed by Herodotus (3.108) and Aristotle (*History of Animals* 585a3–9, 579b30–34), among others.¹⁸

In the myth of the Dioscuri, when Castor was killed, Pollux asked to share his immortality with his brother. His wish was granted by Zeus. The twins spent alternating intervals in heaven.



Behind many of the biotechno-wonders wrought by Medea, and other mythic and historical geniuses of artificial life in the coming chapters, lies a timeless theme, the search for perpetual life. Yearning to overcome death is as ancient as human consciousness. Every conscious being is born innocent of death: all human beings come into the world believing they'll live forever and be forever young. The bitter truth dawns later, a universal disillusionment that finds expression and compensation in myths around the world. The fountain of youth, the elixir of life, reincarnation, resurrection, everlasting fame in cultural memory, perpetuation of bloodlines through progeny, quests for invulnerability, grandiose building monuments—even vampires, zombies, and the undead—all testify to mortals' longing to find ways to defy death, the subject of the next chapter.