

## 5 Quivering Hearts

### The Intimate Union of Bodies and Souls\*

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#### Introduction

Lover, in love: ... One is *in love* with her whose beauty touches the heart.<sup>1</sup>

The *Encyclopédie* of D’Alambert and Diderot notes that “one is in love with her whose beauty touches the heart.” This chapter focuses precisely on how beauty was thought to touch the heart and arouse love—*literally*. We will discuss what the Spanish philosopher Benito J. Feijoo (1676–1764) described as “a delicate mechanism”: how passions (or emotions, as we would say today) arise.<sup>2</sup> This will entail engaging with the physiological foundations of what would later in the century be called sensibility: the “essential link between the human body and the psychological, intellectual and ethical faculties of humankind,” to cite Anne Vila.<sup>3</sup>

During the eighteenth century, the classification of the passions, how to distinguish them, how to control them, and how they affected judgment were all objects of much debate. But one definition on which most contemporaries could have agreed was given by Ephraim Chambers in 1741: “the different motions and agitations of the soul according to the different objects that present themselves to the senses.”<sup>4</sup> Note that Chambers traces the origin of passions first to the senses. Physiology was intertwined with psychology, meaning that different psychological states (love, anger, ire) were held to correspond to certain physiological states (the flowing of internal fluids such as animal spirits and blood; changes in the body’s internal fibers; special movements of the organs, etc.). Or as John Sutton poetically put it: “Love, wonder, dreams, desire and memory were involved in the great circulation of spirits, fluids, and humor in the body and between the body and the world.”<sup>5</sup>

Most people at the end of the seventeenth century conceived of the body as a machine of flesh, a *machina carnis*, composed of “levers, pulleys, cogs, pipes and wheels, in vessels.”<sup>6</sup> But how this machine of flesh was animated, be it by matter alone or by some kind of soul, varied considerably from author to author. What was fundamentally at stake in these disagreements

was the perennial question of what makes living matter so substantially different from nonliving matter, and how it might produce immaterial phenomena such as thoughts and feelings.<sup>7</sup> The details of how this machine worked were crucial because they had philosophical, theological, moral, and political consequences. Did the physiological model, for instance, accommodate free will and thus permit the moral accountability of the subject or not? It demarcated boundaries and defined ontologies, in particular, of what it means to be human and what comprised biological differences, if any, between the sexes, classes, and “races.” Some authors (such as the British anatomist Thomas Willis and his followers) argued that human beings had a rational and immortal soul, while both animals and humans possessed a material one (*anima brutorum*); others (such as Descartes) proposed that animals had no soul at all but were merely pure automatons. Yet others argued that if even the sophisticated behavior of some animals could be explained by matter alone, would that not open the door to thinking that humans also lacked a soul, and therefore, lead to materialism?<sup>8</sup>

Turning to Feijoo (1676–1764), in this context, there are at least two reasons to consider how he envisioned the physiology of passions and the relationship between body and soul. First, Feijoo held a privileged place in the public sphere. Not only was he extremely famous, but he also played a role that was almost entirely new in the Spanish-speaking world: that of the scientific popularizer.<sup>9</sup> He wrote short, witty, and provocative essays in a humorous style to combat superstitions and “wrong ideas” about the natural world, on many different topics, from physics to anthropology to medicine to history. His works were reprinted in astonishing numbers for the Spanish market. To be sure, he was widely read, but the fierce polemics they provoked were read even more widely, boosting his fame even further.<sup>10</sup> The first volume of his *Teatro Crítico Universal* (1726), a collection of short essays, was a blockbuster, and eight more volumes followed (1726–1740). He then published five volumes of his *Cartas Eruditas* (1742–1760), collections of even shorter pieces that were supposed to answer readers’ questions.

For his followers, Feijoo represented the enlightened face of Catholicism. He had ferocious detractors among reactionaries as well as reformist elites, who accused him of not being rigorous enough. Yet his supporters maintained influential roles within the Spanish government, such that in 1750 King Ferdinand VI issued a prohibition against the publication of any opinions that opposed him.<sup>11</sup>

Feijoo’s ideas were eclectic. He greatly admired Francis Bacon (1561–1626) and John Locke (1632–1704) and was a detractor of Descartes and what he called the “atomist sect” (Pierre Gassendi, Nicolas Malebranche); but he did not hesitate to use some of their ideas when needed. As a professor of theology at the University of Oviedo, he had a profound knowledge of Scholastic methods of reasoning, which he criticized fiercely; yet he himself often used Aristotelian language and concepts. He mastered the works of the

classics (Ovid, Pliny), the Renaissance humanists, and the “French Christian libertines,” all of whom he frequently quoted.<sup>12</sup> He drew information from encyclopedias and dictionaries (such as those by Moréri, Corneille, Savérien), and particularly from Pierre Bayle’s *Dictionnaire historique et critique* (1697) and the Jesuit *Dictionnaire universel françois et latin*, popularly known as *Dictionnaire of Trevoux*, which reflected up-to-date discussions on many issues of the day. He was mostly interested, though, in scientific polemics. He was a keen reader of the reports from Europe’s various academies of sciences (Leipzig, London, Paris), the *Journal des Savants* published by the Jesuits (which issued reviews of recent publications), and the English-language *Spectator* when it was translated into French. He knew Regnault’s scientific bestseller *Entretiens physiques*, the *Spectacle de la Nature* by Pluche, Nollet’s course on electricity, and Boyle’s works, as well as works by major figures of the Enlightenment (such as Fontenelle, Voltaire, Maupertuis, Muratori, Rousseau, Montesquieu, and Réaumur).<sup>13</sup> Most of his sources were French (and the French translations of foreign works) and Latin, yet he also read Portuguese and Italian. He exchanged news, books, and manuscripts with his extended network and often received scholars in his monk’s cell who passed through Oviedo to see him.<sup>14</sup> Above all, he was interested in medicine, being himself an honorific member of the Royal Academy of Medicine of Sevilla, and a friend of the famous royal doctor Martín Martínez at the Spanish court and of Gaspar Casal in his hometown.<sup>15</sup>

To be sure, Feijoo never systematized his ideas. This was not his aim: he was a moralist with a pedagogical mission. He arguably influenced the ways his followers thought about their bodies and their souls, which links with my second point: Feijoo complicates the narrative emerging at the time of the progressively gendering of bodies, according to which female bodies were supposed to have greater sensibility than male ones, particularly in amorous and venereal matters.<sup>16</sup> To quote Anne C. Vila: “bodily senses were a tool for constructing the theory of sexual dimorphism.”<sup>17</sup> As I have argued elsewhere, Feijoo defended a “feminist physiology,” in the sense coined by Ian McLean and employed by Gianna Pomata, meaning that female and male bodies were thought to work in the same manner and that female bodies were not inferior copies of male bodies.<sup>18</sup>

Feijoo published his ideas about the intellectual equality of the sexes right away in the very first volume of his *Teatro* (1726), thus stepping into a long debate that was especially vigorous during the seventeenth century: the “querelle des femmes,” which saw arguments for and against women’s intellectual and moral capacities put forward by both sides.<sup>19</sup> In this debate, Feijoo used various kinds of arguments (including catalogs of celebrated women, that is, examples of women who had excelled in the arts and letters), but more importantly in the context of this chapter, he dismantled those theories that based the inferiority of women on biological characteristics.<sup>20</sup> He opposed, for instance, the notions that the arguably smaller size of women’s brains, the supposed tenderness of their brain fibers, or

the coldness and dampness attributed to their bodies precluded intellectual capacities equal to those of men, which were supposedly dry and hot. Feijoo even explained the revolutionary ideas of a Spanish sixteenth-century female author, Oliva de Sabuco, whose work had recently been reprinted with a preface written by his friend, the doctor Martín Martínez.<sup>21</sup> Sabuco's physiology supported the idea that women had at least the same intellectual capacities as men, if not more.<sup>22</sup> Feijoo's point, though, was not to defend Sabuco's system, but to show how "philosophical discourses" could be used to support her views:

But what I feel is that with such philosophical discourses everything can be proved, and nothing is proved. Every man philosophizes in his own way: and if I were to write for flattery, or for caprice, or for ostentation of wit, it would be easy for me, by weaving consequences out of admitted principles, to raise the understanding of women miles above that of our own ... We are all blind, and the blindest of all is the one who thinks he sees things clearly.<sup>23</sup>

Yet in showing that there were no scientific reasons justifying sexual differences in mental and moral capacities, Feijoo also showed that there could not be any differences in men's and women's ways of feeling their appetites and passions, particularly in love. Love could arise, he argued, with equal strength in male and female bodies, and the intensity of amorous feelings was not a mark of femininity. Feijoo, for instance, heartily disagreed with the common opinion that statesmen and military men should not be of an "amorous nature" because that was a symptom of "childish and effeminate spirits." On the contrary, he argued, people capable of feeling love deeply often have the qualities needed by statesmen. They are often "sweet, benign, kind, obliging, human, liberal, deferential, and caring."<sup>24</sup>

This chapter thus adds to the recent historiography demonstrating that several, even contradictory, models of male and female bodies coexisted at the time, especially if one focuses on different literary genres, such as natural philosophy, sexual medical advice, sentimental novels, erotica, or pornography, or considers other categories that intersect with gender (such as "race" or sexual orientation), as some of the chapters in this volume have argued.<sup>25</sup>

Above all, however, this chapter intends to highlight an aspect of these discourses that is often forgotten today: that the relationship between soul and body was imagined to be far more complex and intimate than the simplified picture of a solitary soul in an unruly body. One important consequence of such intense interactions among the various parts of the body and soul was that no insurmountable gap appeared to exist between the sensorial, the intellectual, and the emotional world—assuming there were even such separations at all.

The remainder of this chapter is organized into two parts. In the first, I explore how Feijoo understood what he considered to be the necessarily

intimate relationship between the soul and body, or the “commerce” between soul and body, as it was called at the time. In the second part, I discuss his physiology of passions and other competing theories, further illuminating Feijoo’s choices to align his thoughts with his religious and political ideals.

### The Commerce between Soul and Body

In 1733, the Benedictine monastery of San Martín in Madrid which controlled Feijoo’s production decided it was time to publicize his face. It would be sold as a plate to his fans and included in the sixth volume of the *Teatro*. An oil painting was commissioned from a local artist, Francisco Antonio Martínez Bustamante, and executed in Feijoo’s monastery in Oviedo. Feijoo, now 57 years old, was represented at his desk in the usual iconography of an erudite monk: his cell’s library full of volumes, his hand in the very act of writing. The engraving based on this portrait would become his official image, reproduced and copied innumerable times (Figure 5.1).<sup>26</sup>

However, Feijoo was far from pleased. Writing to his friend the Benedictine Martín Sarmiento, he complained about the painter’s scant skills. Not only did the artist dress him in a “course cloth, typical of the Cappuccinos in older times” but he failed to represent Feijoo’s eyes: “they showed no vivacity and kindness” (“viveza y agrado”); even when Bustamante copied a very expressive painting, Feijoo continued, one “with much soul in the face” (“con mucha alma en el semblante”), the result was a work with “dull or indifferent” eyes.<sup>27</sup>

Beyond providing evidence for Feijoo’s concerns about his appearance and his self-confidence, the anecdote also reflects a common belief in his time: that the interior self and one’s emotions could be reflected in one’s face, especially in one’s eyes. Discussions about the relevance of physiognomy, or the art of knowing the other through the physical traits and colors of the body, were booming.<sup>28</sup> The works of Giovan Battista della Porta, among them *De Humana Physiognomia* (1586), which argues that individuals’ moral and psychological traits could be deciphered by their similitude to animals, were constantly reprinted; however, Charles Le Brun’s *Conférence sur l’expression générale et particulière*, pointed in a different direction.<sup>29</sup> Based on Descartes’ descriptions of the passions (*Traité des passions*, 1649) and Marin Cureau de La Chambre’s works on the same topic, Le Brun systematized the ways emotions are taken to be reflected in the face: he argued that wonder, love, hate, desire, joy, sorrow, fear, extreme hope, despair, courage, and anger could all be recognized by the ways in which the mouth curves or the eyes open or close, and especially in how the eyebrows move, as the soul was taken to express its actions primarily through a special place in the center of the brain near the eyebrows, the pineal gland.<sup>30</sup> In Spain, a compendium of Le Brun for painters had just appeared in 1730.<sup>31</sup>

Attentive to what was being discussed in the public sphere, Feijoo published two essays on physiognomy in 1733.<sup>32</sup> He employs his usual

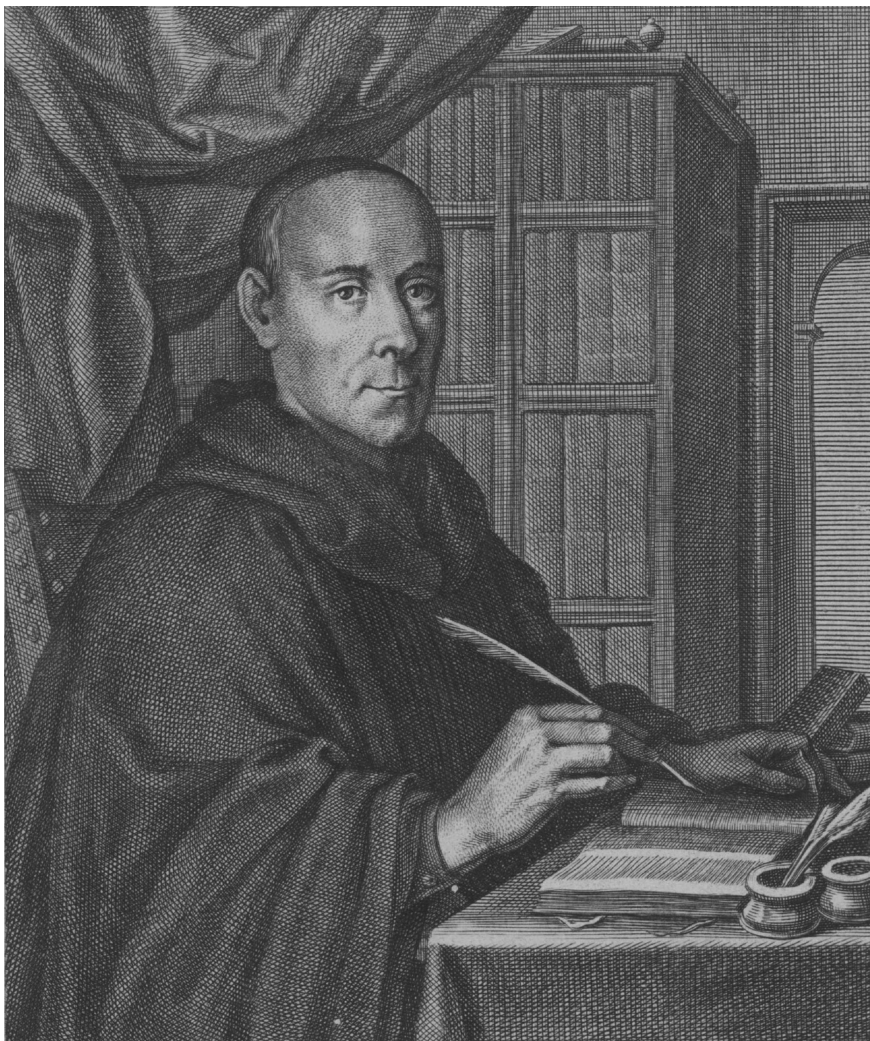


Figure 5.1 Benito Jerónimo Feijoo at his desk (1731), by Juan Bernabé Palomino.

Source: Biblioteca Nacional de España. <http://bdh.bne.es/bnearch/detalle/bdh0000246450#>

pedagogical tactic: a question as a hook (has the art of physiognomy any foundation?) to drag the reader into deeper waters, in this case, the intimate relationship between the soul and the body. He begins in his first piece, *Fisionomia*, by attacking the physiognomy in art as it was classically conceived. He humorously mocked della Porta, asking: How could one conclude that an individual is fierce simply because they resemble a lion? Or that one is witty simply because one's body was rather plump, with a wide

front and long arms?<sup>33</sup> But he also attacked the ancient belief that ugliness was bound up with evilness. It is the rejection, the derision of the others that made those who are unattractive hideous, he argued, not the other way around.

In his second piece, however, *Nuevo Arte Fisionómico*, he presented what he describes as the fruit of his own observations: a method for developing a “true physiognomy.” According to Feijoo, the relationship between external appearance and character could not be grasped through the static traits of the face (look at a dead person, he suggested, and you will be able to see that it is impossible to perceive their mood or temperament). The only way to know someone’s internal state is through their expression or “gesture” (“el gesto”), as it was called in Spanish, the subtle changes in the face triggered by the soul when one is alive:

Shame, bringing the blood to a person’s face, bathes him in honest confusion; anger, rushing it tumultuously, clothes him in fierce turmoil; fear, withdrawing it, strips him of his native color; pleasure moderately enlivens him, soothes his eyes, and dilates a little the whole texture of his face; the affection of laughter considerable varies it.<sup>34</sup>

These are signals that everyone understands, Feijoo argues, they correspond to the passions and affections of the soul, and as we have seen, they had been well characterized by Le Brun and others. But Feijoo holds that there were still other, much more revealing movements in the face that could only be discovered with “highly reflective perspicacity” (similar, he writes, to the way in which we know that the little stars in the heavens exist, though they can only be seen with a telescope). Looking attentively at one’s eyes, for instance, one might ascertain “a very good physiognomic sign”: “A calm, opportune gaze, which only focuses on specific objects, signifies a calm, serene and sane spirit”; while a “restless, vague, mischievous gaze, which stops at no object, but wanders everywhere, signifies imprudence and lightness of mind.”<sup>35</sup> Feijoo concluded that an attentive observer, with time and a very active social life (as it would be necessary to observe many individuals), could eventually match these signs with meanings.<sup>36</sup>

Feijoo repeats his central message in these two essays, that there was an intimate commerce between body and soul, in other pieces.<sup>37</sup> Especially illuminating is the one he would write 20 years later, in which he discussed why music affects us so deeply.<sup>38</sup> There, he compares this union of soul and body to harmonious music. Like other doctors and philosophers of the time (one thinks here of the English doctor David Hartley, the anatomist Thomas Willis, the scholar Samuel Johnson, or the French anatomist Claude Perrault, to note but a few), Feijoo believed that although “pure matter” and “pure spirit” were “philosophically separated,” and that we were ignorant of how one could possibly act on the other, their mutual influence was undeniable. Between body and soul, Feijoo writes, there shines the “most sublime, the

most admirable harmony”: “what sounds in the body, resounds in the soul; what sounds in the soul, resounds in the body.”

Just how the union worked was a topic Feijoo particularly developed in two thrilling essays: “Causas del Amor” and “Remedios del Amor” (1736).<sup>39</sup> Love was a particularly thorny passion for Christian theologues, since love for God and for one’s fellow human beings was central to religious practice but could also easily slip into lechery and sinful behavior. It was also central to theories that tried to explain animal and human behavior, as looking for pleasure and avoiding pain were thought to be the driving forces behind actions (some scholars even postulated that, strictly speaking, there was only love and its contrary, hate, while all the rest of the passions—hope, despair, etc.—were merely variations depending on circumstances).<sup>40</sup> Feijoo distinguishes three types of love. One is “pure appetite,” the passion we feel when we smell a delicious fruit, for instance. These tantalizing objects excite “love,” or rather appetite, because the soul has already experienced them and can evoke the “representation of the pleasure.” The second type of love is “intellectual love,” in which only the rational part of the soul is excited. This is, for instance, the love that one feels for God. Finally, Feijoo argues, there is “passionate love,” the love that one feels for friends and lovers—and this is the kind of love that Feijoo was interested in discussing with his readers. Feijoo was keen to show them what he claimed to be a new way of looking at the issue; this was something addressed not by poets but by natural philosophers: the “physics of love.”

To what extent was Feijoo echoing other authors? As with most of his contemporaries, his ideas about the passions and their origins had roots in the late seventeenth-century “sciences of the soul” (“scientia de anima”), which were themselves based on Aristotle.<sup>41</sup> This body of knowledge, taught in the universities of both Protestant and Catholic countries during the late seventeenth century, structured the soul into three “faculties” (or some spoke of three classes of souls). The “vegetative” faculty was responsible for the basic functions of living beings (nutrition, growth, and reproduction). The rational faculty, only found in humans, was served by the will and the understanding and was responsible for the higher cognitive functions, such as love toward God. And finally, the “sensitive” faculty was responsible for the behavior of animals and humans; it explained animal instincts, as well as the lower passions and appetites. It needed not only the five external senses but also the “internal senses” (of which there were normally considered to be three: imagination, memory, and a rudimentary cognition), and it had the “faculty of movement” (that is to say, it could produce movements both physical and emotional).<sup>42</sup> Rather than inquiring into the properties of the soul, which had been the preoccupation of earlier times, natural philosophers at the end of the seventeenth century were more interested in explaining their effects, a project that Feijoo continued. Yet as we will see in the following, Feijoo also differed from some of his contemporaries in the mechanism that he envisioned. Crucially, he did not find it necessary here to involve the subtle “animal spirits” invoked by others.

### The Senses, the Soul, and the Passions

Consider the painting of *Ariadne and Bacchus on the Isle of Naxos* by the French artist Antoine Coypel, who famously copied Le Brun's representation of love in Ariadne's head (see Figures 5.2 and 5.3).<sup>43</sup> If we apply the physiological theories about the passions at the time, and Feijoo's in particular, what can we say was happening in Ariadne's heart at this moment—when she had been abandoned by Theseus after rescuing him from the labyrinth but was now enthralled by Bacchus?

According to natural philosophers, the “delicate mechanism” that caused love to arise and be reflected in the face and other parts of the body must connect the senses, the brain, the soul, and the organs through the nervous system, which had recently been described in great detail by the British anatomist Thomas Willis (1621–1675). Feijoo agreed with his contemporaries' ideas that the five external senses worked as receptors of the impacts of



Figure 5.2 *Bacchus and Ariadne on the Isle of Naxos*, c. 1693. Antoine Coypel (French, 1661–1722).

Source: Philadelphia Museum of Art: purchased with funds (by exchange) from the bequest of Edna M. Welsh and the gift of Mrs. R. Barclay Scull, 1990, 1990-54-1. <https://philamuseum.org/collection/object/85904>

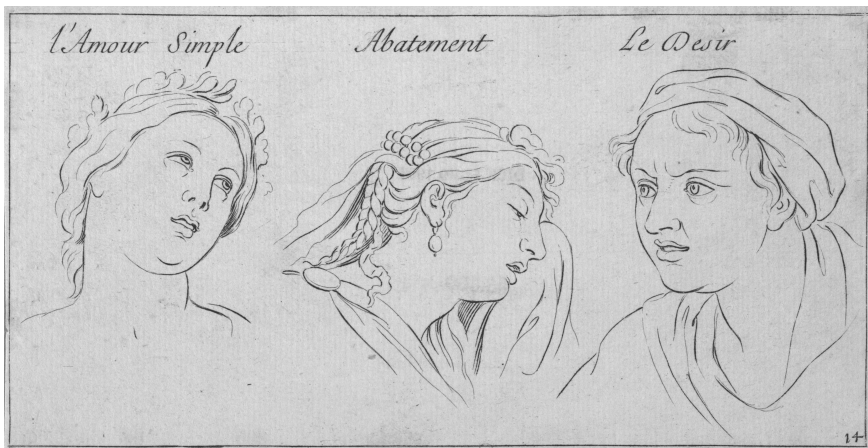


Figure 5.3 *L'Amour simple*, after Charles Le Brun, *Love*, from Picart's edition of the *Conférence* (London, 1701).

Source: <https://www.metmuseum.org/art/collection/search/681486>

different kinds of particles:<sup>44</sup> corpuscles of light that touch the retina, air that touches the timpanos, and odoriferous particles that reach the nervous filaments of the nasal mucosa.

According to Feijoo, nerves have a great capacity to respond to different impacts of matter; as he writes, they can “separate, corrugate, stretch, compress, loose, or become more flexible or rigid” depending on the stimulus.<sup>45</sup> The sensorial nerves, he continues, meet together in one particular place in the brain, the “sensorium commune,” where the soul was held to be. The soul then receives the “commotions” of the sensorial nerves (once again, Feijoo admits total ignorance of how this occurs)<sup>46</sup> and then deciphers these undulatory movements to produce “perception” (“percepción”). Feijoo recalls the idea that “it is the soul that sees, not the eyes,” a well-known aphorism.<sup>47</sup> But sometimes, he adds, the imagination itself can add to the agitation of the fibers in the brain—which also means that an object need not even be present to excite a passion! Perhaps, he speculated, even in the presence of the object, the imagination itself moves the fibers of the brain (which would explain why we love even without willing).<sup>48</sup> Memories would then add to the interpretation of the soul. If we continue with our example of Coppel's painting and how it depicts Ariadna, we could say that Ariadna's soul has experienced this “perception”: it recognizes the sweetness of Bacchus's smell, the warmth of his hand, his deep and assuring voice, and his strength.<sup>49</sup> Ariadne's imagination might even be picturing her in the arms of Bacchus.

The soul (or the imagination) then might send the fitting response to this perception to the brain—which might be to “feel a passion,” such as love. In Feijoo's model, the brain communicates via the spinal nerves with the corresponding organs to produce certain passions. Love is, for Feijoo an “internal

sensation” and, as such, must take place in an internal organ.<sup>50</sup> Similar to the way the sensations of hunger and thirst are felt in the stomach, or lewdness in “other parts of the body,” the organ that feels the sensation of love (“sensación de amor”) is, for Feijoo, the heart. Feijoo is quite explicit on this point—how the flames of love influence the heart: love “disturbs, agitates, compresses, expands, infuriates, saddens, distresses, gladdens, dismays, and encourages [the heart] according to the different states in which the lover may be.”<sup>51</sup> Sometimes, if love has what Feijoo calls a “concupiscent part,” these agitations are transmitted to the genitals and the breast. On this point, Feijoo quotes the English anatomist Willis, who describes how the intercostal nerve facilitates communication between the brain, the heart, the breast, and the genitals.

At this point, the reader might be asking why the brain should be involved, not only the soul and the nerves. Feijoo clarifies this point, too: the reason is that its involvement explains certain empirical phenomena. It would explain, for instance, what happens in patients who suffer from “apoplexy”—i.e., who cannot feel if their foot or hand is pricked because the part of the brain that communicates with the nerves of these limbs is damaged. Or why, if our senses are not damaged, we do not hear or see when we are sleeping. Or what causes the problem of “phantom limbs”: that is, why a patient still feels pain after an amputation.<sup>52</sup>

It is not only in the heart and other internal organs that one feels the agitations of love, but such agitations also reach the muscles and thus produce external signs of love (in the same way as with other passions, such as anger, fear, etc.). This is what the painters, according to Le Brun, should reflect in the faces of their historical or mythological actors. Coppel used Le Brun’s advice to depict the passion of love: Ariadna’s head is bowed, her mouth is slightly opened, her cheeks have flushed, and her lips are “moistened by the vapors which rise from the heart.”<sup>53</sup> Seen thus, Bacchus’s “beauty” in the painting has literally touched Ariadna’s heart, as we discussed in the Introduction. For Feijoo, though, it is not only external beauty that awakens love. In another essay from 1739 that provoked an investigation by the Inquisition, “Importancia de la ciencia física para la moral” (The Importance of the Physical Sciences for Morality), he claims that other attributes, such as kindness and discretion (and even arrogance), could arouse men: “concupiscence has much variability.”<sup>54</sup>

It should be noted, furthermore, that Feijoo does not here invoke “animal spirits,” as other authors did, such as Feijoo’s friend, the doctor Martín Martínez, Descartes, Le Brun, or Willis. Willis and others had argued that animal spirits act as messengers between the soul and the internal organs. They were supposedly subtle, quick fluids; or in Swift’s satirical description: “a Crowd of little Animals, but with Teeth and Claws extremely sharp.”<sup>55</sup> They moved rapidly from the brain to the various parts of the body, sometimes through the nerves, or through pores, or through well-worn channels in the nerves that had been traversed many times (thus explaining the

“tendencies” of people to always react in certain ways, such as how those who are “choleric” react with anger, etc.). The advocates of animal spirits needed to prove that the nervous system was suited for this traffic: Martínez, for instance, believed that the aggregation of thin nervous filaments in the nerves left some gaps for the animal spirits to travel. The Leiden professor Hermann Boerhaave believed in hollow nerves through which animal spirits could travel.<sup>56</sup> The opinion of Willis was that, even though the peripheral nerve structure (cranial nerves, spinal nerves, and the nerve plexuses) was solid, this did not impede spirits from percolating through them.<sup>57</sup> Animal spirits, he argued, were the executors of all visible and invisible bodily reactions: from blushing in the face to the sensation of hunger in the stomach and the sensation of love in the heart. Even into the 1750s, animal spirits persisted as an explanation for passions, as one can see in this entry in the *Encyclopédie*:

We know the extent to which passions depend on the degree of the movement of blood and on the reciprocal impressions produced by animals['] spirits on the heart and brain, the union of which is made so intimate by the agency of the nerves.<sup>58</sup>

Feijoo, however, in his explanations of the “physics of love,” did not consider the existence of animal spirits. His scheme required only the vibrations of the solid nerves. The senses, the soul, the brain, and the organs—all communicated, in his model, through the undulatory movements of the nerves.<sup>59</sup>

Other questions debated at the time in regard to the relationship of the soul and the body included the physical site of the soul and whether animals had one. For Claude Perrault (1613–1688), for instance, an anatomist working in the Paris Academy of Sciences who dissected most of the exotic animals that entered the Royal Menagerie and author of the acclaimed four-volume *Essais de physique* (1680–1688), the idea of a soul that dwelled in the body “as one is in a house” was absurd. Perrault instead saw the soul “intimately united with” the body, and as something that “ought to be considered as involved in all our actions.”<sup>60</sup> Like his predecessor and contemporary of Descartes, Marin Cureau de la Chambre (1594–1669), Perrault believed that even the simplest action of the senses implied that some thinking was also taking place. Drawing on a long tradition, Cureau de la Chambre defended two types of souls, the sensible and the rational, in which the former was implicated in sensing and feeling and a degree of thinking; and the latter, belonging only to humans, was devoted to the high cognitive potencies. Like many members of the Royal Academy of Sciences, both Perrault and Cureau de la Chambre opposed Descartes in his arguments denying animals a soul. For Descartes and his followers, the actions of animals could be explained by the movements of matter alone, similar to the automatons that many people in the seventeenth and eighteenth centuries found so fascinating.

Feijoo, however, felt it was crucial to defend the position that animals have a soul, and specifically one with sensitive functions. But this provoked the question of what substance animal souls might be made of. According to Feijoo, the substance that formed the soul of the animals must be neither matter nor spirit but “must be material.”<sup>61</sup> By this, he means that the animal soul “depends on matter for its operations” and its sphere of action would be limited to the “material entities,” that is to say, animals would not be capable of abstract thinking, of knowing spiritual things, or reflecting on their acts.<sup>62</sup> Building on this idea, Feijoo discusses the intermediate state in which animals seemed to be—with actions that could not be easily explained solely by “blind instinct” but rational capacities that were not as advanced as those of humans.<sup>63</sup> One might wonder why Feijoo did not simply think, with Willis and others, that animal souls were composed of “subtle matter”? One possible explanation is that this would mean giving matter too much capacity, thus opening the door to materialism.

One might ask: How does this physiological model conceive of both subjectivity and gender? As each person has different “internal constitutions, disposition of fibers, etc.,” Feijoo replies here, they would necessarily be affected by the external particles differently and ultimately have different feelings. Feijoo disputes that internal dispositions are related either to Galenic temperaments (both the sanguine and the melancholic temperaments could be passionate, for example) or to gender, as men could also be of an “amatory nature.”

In various essays over the years, Feijoo addressed other pressing issues entailed by any physiological model of the passions. He asked, for instance, how we might change or improve if our tastes and feelings are somehow determined by our internal constitutions; or how we might control our passions if all of them are driven by a physiological mechanism. This chapter does not afford space to delve into these issues, but I would like to end by highlighting that Feijoo showed that there was room for improvement, learning, and controlling our feelings and passions by training the imagination (in particular, a part of the imagination called “apprehension”) and the memory.<sup>64</sup>

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This chapter has discussed the bodily bases of sensibility, i.e., the physiological processes that connect the external and the internal worlds of living beings. This is also what philosophy since the nineteenth century has construed as the body-mind/soul problem, the puzzling nature of which was expressed by G. S. Rousseau:

why it has been the case (and still is) that conceptualizing consciousness, the human body, and the interactions between the two has proved so confusing, contentious, and inconclusive—or, as we might

put it, has acted as the grit in the oyster that has produced pearls of thought.<sup>65</sup>

Returning to the ways in which love and other passions were thought, in the late seventeenth and eighteenth centuries, to arise, the chapter highlights the beliefs of thinkers at the time in an intimate bond between soul and body. Philosophers and doctors of this period, such as Descartes, Feijoo, Willis, Perrault, and Gassendi, developed careful “anatomies of the soul” to unveil the links between them. The “sentient souls” were understood to communicate incessantly with the flesh, either through nerve waves as with Feijoo, or through swift animal spirits. These theories were also expected to account for both the particular and the universal: the belief that different subjects might have reacted differently to the same stimuli, even as all subjects were (usually) able to recognize others’ emotions and make judgments about their character at first sight.

In all cases, the physiological models that explained the links between the external world captured by the senses and the behavior and feelings of animals and human beings were forced to explain observations of doctors and philosophers and to be congruent with other knowledge about the body that was widely circulating at the time.<sup>66</sup> This included the findings of anatomical dissections of sense organs, nerves, and brains, and especially vivisections of animals; examples of specific aspects of animal behavior (such as animals that ran away from humans who once mistreated them); collections of “medical cases” in which doctors described patients who lacked sensation, even though the sense organ in question was not damaged; contrary cases of amputations in which patients still felt “phantom” limbs; the lack of sensitivity of sleeping bodies, unable to sense the world when not awake; deceptive perceptions of memory and imagination; and questions of how mood affects the exacerbation of diseases and, vice versa, how cheerful thoughts can sweeten pain.

This puzzle, of course, is still with us. In Ishiguro’s novel *Klara and the Sun* (2021), humans develop a new series of robots, the EF (Especial Friends), supposedly designed to accompany teenagers. One particularly observant robot in the novel is Klara, who studies the faces of the people passing by, from the screen window where she was exposed to the world, to try to understand their reactions. Like many other science fiction writers, Ishiguro confronts the question posed by Feijoo: Could one, given enough time and individuals to observe, learn to pair gestures with feelings and grasp the interior selves of others? Or, to pose the question in another way: could a robot, an AI, then replace a person? At the end of the novel, Klara seems to have understood that the problem is not to achieve “accuracy” in “learning” the other—in this case, Josie, the teenager for whom she cares. Rather, the question is whether a machine can finally be loved, can touch the hearts of humans: “I’d never have reached what they felt for Josie in their hearts.”<sup>67</sup> The paradox posed by Ishiguro—no matter what Klara says—is that the robot actually moves us as

readers. How do we now redefine these questions about love and empathy, about emotions? Can Klara feel “something” for us? If the “delicate mechanism” that causes empathy can be reproduced, then what does it mean to be human?

## Notes

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- 1 “AMANT, AMOUREUX, adj. (*Gramm.*) Il suffit d’aimer pour être *amoureux*; il faut témoigner qu’on aime pour être *amant*. On est *amoureux* de celle dont la beauté touche le cœur,” *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, 1:315–316 (Paris, 1751). ARTFL Encyclopédie (uchicago.edu), accessed 14 February 2024. The definitions were taken from the dictionary compiled by Gabriel Girard (1677–1748): Gabriel Girard, *Synonymes français, leurs significations et le choix qu’il en faut faire pour parler avec justesse* [Texte imprimé], par M. l’abbé Girard (Paris: impr. de la Vve d’Houry, 1736); cited from Gallica, “Amoureux,” <https://gallica.bnf.fr/ark:/12148/bpt6k57126368/f41.item>, accessed 14 February 2024. The definition was also found in the edition of 1718: Gabriel Girard, *La justesse de la langue françoise ou les différentes significations des mots que passent pour synonymes* (Paris: Chez Laurent D’Houry, 1718), <https://archive.org/details/lajustessedelal00giragoog/page/n68/mode/2up>.
- 2 Benito J. Feijoo, “Causas del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 348–394, on 364 <http://www.filosofia.org/fejoo.htm>. The *Theatro* was a collection of eight volumes published between 1726 and 1740. The contents of volume 9, which collected additions and commentaries to texts from the first eight volumes, were placed by later editors (beginning in 1765) in the original eight volumes. The *Cartas* was a collection of five volumes published between 1745 and 1760. All the works by Feijoo discussed in this chapter will be quoted from the digital version at <https://www.filosofia.org/fejoo.html>. The texts in the *Theatro* are from the edition of Madrid: Real Compañía de Impresores y Libreros del Reino, 1787, while the texts of the *Cartas* are from the edition of Madrid, Real Compañía de Impresores y Libreros del Reino, 1779. I will note only the year of the piece’s first publication, otherwise directing the reader to the digital version. On the differences between emotions and early modern terminology, see Thomas Dixon, “‘Emotion’: The History of a Keyword in Crisis,” *Emotion Review* 4, no. 4 (2012): 338–344; Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003). This chapter builds on some of the ideas I proposed in “A Feminist Physiology: B.J. Feijoo (1676–1764) and His Advice for Those in Love,” *ISIS* 112, no. 4 (Dec. 2021): 776–784. I am grateful to the editors for granting me permission to return to those arguments here.
- 3 Anne C. Vila, *Enlightenment and Pathology: Sensibility in the Literature and Medicine of Eighteenth-Century France* (Baltimore: John Hopkins University Press, 1998), 2.

- 4 Ephraim Chambers, *Cyclopaedia*, vol. 2 (1741), "Passion," [https://artflsrv04.uchicago.edu/philologic4.7/chambers\\_new/navigate/2/3194](https://artflsrv04.uchicago.edu/philologic4.7/chambers_new/navigate/2/3194), accessed 14 February 2024. Passions, of course, could also arise from memories and by associations of these with the imagination, as discussed in this chapter.
- 5 John Sutton, "Controlling the Passions: Passion, Memory and the Moral Physiology of Self in Seventeenth Century Neurophilosophy," in *The Soft Underbelly of Reason: The Passions in the Seventeenth Century*, ed. Stephan Gaukroger (London: Routledge, 1998), 115–146, 116–117.
- 6 Anita Gerrini, *The Courtiers' Anatomists. Animals and Humans in Louis XIV's Paris* (Chicago: University of Chicago Press, 2015), 124; Jacques Roger, *The Life Sciences in Eighteenth-Century French Thought* (Stanford: Stanford University Press, 1997).
- 7 Roy Porter, *Flesh in the Age of Reason: The Modern Foundations of Body and Soul* (New York: W.W. Norton and Company, 2003), 50–54, on 51. For the main lines of the problem, i.e., how the material impressions of the senses were translated into immaterial entities (feelings, thoughts, ideas), see especially chapters 3, 4, and 5. On this topic, see also G. S. Rousseau and Roy Porter, "Introduction: Toward a Natural History of Mind and Body," in *The Language of Psyche: Mind and Body in Enlightenment Thought*, ed. G.S. Rousseau (Berkeley: University of California Press, 1990), 3–44.
- 8 Robert G. Frank, Jr. "Thomas Willis and His Circle: Brain and Mind in Seventeenth-Century Medicine," in *The Language of Psyche: Mind and Body in Enlightenment Thought*, ed. G.S. Rousseau (Berkeley: University of California Press, 1990), 107–147.
- 9 With all the caveats of using this definition in the eighteenth century.
- 10 On the publishing figures, see Antonio Lafuente and Nuria Valverde, "Las políticas del sentido común: Feijoo contra los dislates del rigor," in *Feijoo, hoy (semana Marañón 2000)*, ed. Inmaculada Urzainqui (Oviedo: Fundación Gregorio Marañón/Instituto Feijoo de Estudios del siglo XVIII, 2003), 131–157, on 135: Between the 40 years of the first volume of the *Teatro* and his death, there seem to have been 90 editions, with a total of 500,000 volumes printed. On the opponents and enemies of Feijoo, see Antonio Lafuente and Nuria Valverde, "Las políticas del sentido común: Feijoo contra los dislates del rigor," in *Feijoo, hoy (semana Marañón 2000)*, ed. Inmaculada Urzainqui (Oviedo: Fundación Gregorio Marañón/Instituto Feijoo de Estudios del siglo XVIII, 2003), 137 and 140.
- 11 On the position of Feijoo among intellectual elites, see Giovanni Stiffoni, "Introducción: Biografía y Crítica," in *Benito Jerónimo Feijoo, Teatro Crítico Universal* (Madrid: Clásicos Castalia, 1986), 9–71. The works published in favor of and against Feijoo are also available digitally at <https://filosofia.org/fejoo.htm>. On how Feijoo himself used the paratexts in his works to reinforce his authority, see Pedro Álvarez de Miranda, "Los paratextos de las obras de Feijoo," in *Con la razón y la experiencia: Feijoo 250 años después*, ed. Inmaculada Urzainqui Miqueleiz and Rodrigo Olay Valdés (Oviedo: Trea, Instituto Feijoo de Estudios del Siglo XVIII, 2016), 331–350.
- 12 José Antonio Maravall, "El primer siglo XVIII y la obra de Feijoo," in *II Simposio sobre el padre Feijoo y su siglo. Ponencias y comunicaciones* (Oviedo: Centros de Estudios del S.XVIII, 1981), 151–196, on 166. Also available online: <https://www.cervantesvirtual.com/obra/ii-simposio-sobre-el-padre-feijoo-y-su-siglo-ponencias-y-comunicaciones--0/>, accessed 14 February 2024.
- 13 G. Delpy, *L'Espagne et l'esprit européen. L'œuvre de Feijoo (1725–1760)* (Paris: Librairie Hachette, 1936) and G. Delpy, *Bibliographie des sources françaises de Feijoo* (Paris: Librairie Hachette, 1936); S. J. Ramón Ceñal, "Fuentes jesuíticas francesas de la erudición filosófica de Feijoo," *Cuadernos De Estudios Del Siglo XVIII* 18, no. 2 (Nov. 1996): 285–314.

- 14 Harcourt Brown, "History and the Learned Journal," *Journal of the History of Ideas* 33, no. 3 (1972): 365–378.
- 15 Gregorio Marañón, *Las ideas biológicas del padre Feijoo* (Madrid: Espasa Calpe, 1962), 125–131.
- 16 Sara Toulalan and Kate Fisher, eds., *The Routledge History of Sex and the Body, 1500 to the Present* (London: Routledge, 2013).
- 17 Anne C. Vila, "Introduction: Powers, Pleasures, and Perils of the Senses in the Enlightenment Era," in *A Cultural History of the Senses in the Age of Enlightenment*, ed. Anne C. Vila (Bloomsbury, 2014), 1–20, on 16. For a discussion of the topic of women's sensibility versus men's in Spain and France around 1780, see Isabel Morant Deusa and Mónica Bolufer Peruga, "Sobre la razón, la educación y el amor de las mujeres: mujeres y hombres en la España y en la Francia de las luces," *Studia Histórica. Historia Moderna* 15 (1996): 179–208.
- 18 Elena Serrano, "A Feminist Physiology: B. J. Feijoo (1676–1764) and His Advice for Those in Love," in "It's a Match!," ed. Hansun Hsiung and Elena Serrano, special issue, *ISIS* 112, no. 4 (Dec. 2021): 776–785. See also Ian Mclean, *The Renaissance Notion of Woman: A Study in the Fortunes of Scholasticism and Medical Science in European Intellectual Life* (Cambridge: Cambridge University Press, 1980), especially chapter 3 (28–46); Gianna Pomata, "Was There a Querelle des Femmes in Early Modern Medicine?," *Arenal* 20, no. 2 (2013): 313–341.
- 19 Benito J. Feijoo, *Theatro Crítico Universal* (1726), "Defensa de las mujeres." <https://www.filosofia.org/bjf/bjft116.htm>.
- 20 Mónica Bolufer, "Medicine and the *Querelle des Femmes* in Early Modern Spain," *Medical History* 53, no. S29 (2009): 86–106.
- 21 Martín Martínez, "Elogio de la Obra de nuestra insigne Doctriz doña Oliva de Sabuco," in Oliva de Sabuco, *Nueva filosofía de la naturaleza del hombre* (Madrid: Imp. Domingo Fernández, 1728). There is some debate today about whether this text was written by Oliva de Sabuco, by her father, or by both of them. See Álvaro Martínez-Vidal "Los orígenes del mito de Oliva Sabuco en los albores de la Ilustración," *Al-Basit* 13 (Dec. 1987): 137–151.
- 22 See the introduction by Gianna Pomata to her translation of Oliva de Sabuco, *The True Medicine* (Toronto: Victoria University, 2010), 1–86.
- 23 Benito J. Feijoo, "Defensa de las mujeres" in *Theatro Crítico Universal*, vol. 1 (1726), 367–368, 366. <https://www.filosofia.org/bjf/bjft116.htm>.
- 24 Benito J. Feijoo, "Causas del amor," in *Theatro Crítico Universal*, vol. 7 (1736), 348–394, 378. <https://www.filosofia.org/bjf/bjft715.htm>.
- 25 See, for instance, the chapters in this volume edited by Clorinda Donato, Magally Alegre Henderson, and Enrique Morales de Eusebio; Karen Harvey, *Reading Sex in the Eighteenth Century: Bodies and Gender in English Erotic Culture* (Cambridge: Cambridge University Press, 2004), 1–34; Julie Peakman and Sarah Watkins, "Making Babies: Eighteenth-Century Attitudes towards Conception, Reproduction and Childbirth," in *The Secrets of Generation: Reproduction in the Long Eighteenth-Century*, ed. Raymond Stephanson and Darren N. Wagner (Toronto: University of Toronto Press, 2015), 458–476; Roy Porter, "The Literature of Sexual Advice before 1800," in *Sexual Knowledge, Sexual Science: The History of Attitudes to Sexuality*, ed. Roy Porter and Mikuláš Teich (Cambridge: Cambridge University Press, 1994), 134–157. On the debates about the equality of the sexes in Spain, see Mónica Bolufer Peruga, "New Inflections of a Long Polemic: The Debate between the Sexes in Enlightened Spain," in *A New History of Iberian Feminism*, ed. Silvia Bermúdez and Roberta Johnson (Toronto: University of Toronto Press, 2018), 38–49.
- 26 Javier González Santos, "Iconografía dieciochista del padre Feijoo: Un estudio del mercado editorial y su incidencia en la difusión de la imagen del sabio," in *Feijoo hoy*, ed. Inmaculada Urzainqui (Instituto Feijoo, 2003), 159–224.

- 27 Javier González Santos, "Iconografía dieciochista del padre Feijoo: Un estudio del mercado editorial y su incidencia en la difusión de la imagen del sabio," in *Feijoo hoy*, ed. Inmaculada Urzainqui (Instituto Feijoo, 2003), 164: "estameña bastísima, de la que vestían un tiempo los capuchinos;" "y así, en todas sus copias, aun las que saca por otras pinturas de mucha alma en el semblante, deja unos ojos neutros o indiferentes."
- 28 Roy Porter ed., "Making Faces: Physiognomy and Fashion in Eighteenth-century England," *Etudes Anglaises* 38, no. 4 (1985): 385–396; David Harris Sacks, "'The Confusion of Faces': The Politics of Physiognomy, Concealed Hearts, and Public Visibility," in *Making Publics in Early Modern Europe: People, Things, Forms of Knowledge*, ed. Bronwen Wilson (London: Routledge 2011); Natalia Delgado Martínez, "Fisiognomía y expresión en la literatura artística española de los siglos XVII y XVIII," *Anuario del Departamento de Historia y Teoría del Arte*, UAM 14 (2002): 205–230. For a discussion about the ways in which these novelists used or subverted the rules of physiognomy, see Roy Porter, *Flesh in the Age of Reason: The Modern Foundations of Body and Soul* (New York: W.W. Norton and Company, 2003), 244–256.
- 29 Charles Le Brun, *Méthode pour apprendre à dessiner les passions, proposée dans une conférence sur l'expression générale et particulière* [facsimile of the edition Amsterdam, 1702] (Hildesheim: Olms, 1982). There is a facsimile of Mathías de Yrala Ayuso, *Método sucinto i compendioso de cinco simetrías: apropiadas a las cinco órdenes de arquitectura: adornada con otras reglas viles. Año de 1739 in Vida y Obra de Fray Matías de Irala, grabador y tratadista español del siglo XVIII*, Antonio Bonet Correa, 2 vol. (Madrid: Turner, 1979). On the possible sources of Le Brun, see Jennifer Montagu, *The Expression of the Passions* (New Haven: Yale University Press, 1994), Appendix III.
- 30 Cureau de la Chambre published *Les Characters des passions* in six parts between 1640 and 1662.
- 31 Le Brun gave his lecture "Sur l'expression générale et particulière" to the Académie Royale de Peinture in 1668. It was to be completed in two other parts, the first on how to use expression in painting in general, and the second—never finished—on a system of physiognomy. The lecture was printed posthumously. An English translation can be found in Jennifer Montagu, *The Expression of the Passions* (New Haven: Yale University Press, 1994), 125–140.
- 32 Benito J. Feijoo, "Fisionomía," <https://www.filosofia.org/bjf/bjft502.htm>, and "Nuevo Arte Fisionómico," <https://www.filosofia.org/bjf/bjft503.htm>, both in *Theatro Crítico Universal*, vol. 5 (1733).
- 33 These were the ones based on Giambattista della Porta, *De humana physiognomonia libri IIII* (1586).
- 34 Benito J. Feijoo, "Nuevo Arte Fisionómico," in *Theatro Crítico Universal*, vol. 5 (1733), 63–72, 66: "La vergüenza, llevando la sangre al rostro, le baña de una honesta confusión; la ira, precipitándola tumultuariamente, le viste de una turbación feroz; el miedo, retirándola, le desnuda del nativo color; el placer le aviva moderadamente, serena los ojos, y dilata un poco toda la textura de la cara; el afecto de risa, la varía considerablemente." <https://www.filosofia.org/bjf/bjft503.htm>.
- 35 Benito J. Feijoo, "Nuevo Arte Fisionómico," in *Theatro Crítico Universal*, vol. 5 (1733), 63–72, 71: "Ve aquí una señal Fisionómica muy buena. Un mirar tranquilo, oportuno, que sólo se determina a los objetos precisos, significa un ánimo quieto, sereno, y cuerdo. Al contrario, un mirar inquieto, vago, travieso, que en ningún objeto para, sino que por todos discurre, significa imprudencia y ligereza de ánimo." <https://www.filosofia.org/bjf/bjft503.htm>.
- 36 Benito J. Feijoo, "Nuevo Arte Fisionómico," in *Theatro Crítico Universal*, vol. 5 (1733), 63–72, 72: "para que pueda cultivar este terreno quien tenga más ocio, y

- más comercio con el mundo que yo; pues es materia ésta que pide necesariamente dos cosas: mucho comercio con el mundo, para hacer observación en muchos individuos; y mucha reflexión para cotejar las señas con los significados.” <https://www.filosofia.org/bjff/bjft503.htm>.
- 37 According to Feijoo, the influence of the soul on the body was total (“there is rarely an affection in the soul that it is not communicated to the body”); the influence of the body on the soul, by contrast, could operate only through “images” fabricated in the brain.
  - 38 Benito J. Feijoo, “El deleite de la Música, acompañado de la virtud, hace en la tierra el noviciado del Cielo: A una Señora devota, y aficionada a la Música,” *Cartas Eruditas y Curiosas*, vol. 4 (1753), 1–32. <https://filosofia.org/bjff/bjfc401.htm>. On Hartley, Willis, and Johnson, see Roy Porter, *Flesh in the Age of Reason: The Modern Foundations of Body and Soul* (New York: W.W. Norton and Company, 2003); on Claude Perrault, see below in this chapter.
  - 39 Benito J. Feijoo, “Causas del Amor,” y “Remedios del Amor” in *Theatro Crítico Universal*, vol. 7 (1736).
  - 40 Thomas Dixon, *From Passions to Emotions: The Creation of a Secular Psychological Category* (Cambridge: Cambridge University Press, 2003; paperback edition, 2006); see chapter 1.
  - 41 I am following Fernando Vidal, *The Sciences of the Soul: The Early Modern Origins of Psychology* (Chicago: Chicago University Press, 2011), 32–40: “The physiological dimensions of the *scientia the anima* came from the Galenic tradition, whose influence in physiology prevailed longer than his anatomical conclusions (revised by Vesalio, 1543). Galeno himself drove in older traditions attributed to Hippocrates.”
  - 42 On internal senses, see Jon McGinnis, “Avicenna on Medical Practice, Epistemology, and the Physiology of the Inner Senses,” in *Interpreting Avicenna: Critical Essays*, ed. Peter Adamson (Cambridge: Cambridge University Press, 2013); Charis Charalampous, *Rethinking the Mind-Body Relationship in Early Modern Literature, Philosophy and Medicine: The Renaissance of the Body* (NY, London: Routledge, 2015), 5.
  - 43 Coppel also used Le Brun’s depictions of joy and surprise in the other characters of the painting. See Jennifer Montagu, *The Expression of the Passions* (New Haven: Yale University Press, 1994), 85.
  - 44 Here, Feijoo distanced himself from the Scholastics and followed Newton and others in the mechanistic views of light, sound, etc. Benito J. Feijoo, “Causas del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 348–394, 366–367.
  - 45 Benito J. Feijoo, “Causas del amor,” in *Teatro Crítico Universal*, vol. 7 (1736), 348–394, 367: “Es distinta la impresión por el modo, y por la parte en que se hace: la impresión, que hace en el cerebro el objeto agradable, aunque se haga en las mismas fibras, es muy distinta de la que hace el objeto ingrato: y aun en la clase de gratos, como también en la de ingratos, hay gran variedad.”
  - 46 Benito J. Feijoo, “Causas del amor,” in *Teatro Crítico Universal*, vol. 7 (1736), 348–394, 366: “y mediante la conmoción que reciben las fibras de esta parte príncipe se excita en el alma la percepción de todos los objetos sensibles.”
  - 47 Feijoo, *Cartas Eruditas y Curiosas*, vol. 4 (1752): “Que no ven los ojos si no el alma, y se extiende esta máxima a las demás sensaciones,” 363–374, <https://www.filosofia.org/bjff/bjfc426.htm>.
  - 48 Benito J. Feijoo, “Remedios del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 410–411: “creo que en algunas pasiones, aun en la presencia del objeto, es la imaginación quien da todo el impulso a las fibras del cerebro, o sólo mueve el objeto las fibras del cerebro por medio de la imaginación.”
  - 49 Benito J. Feijoo, “Causas del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 348–394, 367: “Esta percepción es una resultancia natural de la conmoción de las

- fibras del cerebro, siendo la conexión de uno con otro consiguiente necesario de la unión del alma al cuerpo.”
- 50 Benito J. Feijoo, “Causas del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 348–394: “que el origen así del amor, como de todas las demás pasiones, no puede menos de colocarse donde está el origen de todas las sensaciones internas. La razón es clara; porque el ejercicio de cualquiera pasión no es otra cosa, que tal, o tal sensación ejercida, o ya en el corazón, o en otra entraña, o en otro miembro.”
  - 51 Benito J. Feijoo, “Causas del amor,” in *Theatro Crítico Universal*, vol. 7 (1736), 348–394, 365: “El efecto fervoroso del amor hace sentir sus llamaradas en el corazón: le inquieta, le agita, le comprime, le dilata, le enfurece, le humilla, le concongoja [sic], le alegra, le desmaya, le alienta, según los distintos estados en los que esté el amante.”
  - 52 On the discussions about the “the phantom member,” see Alanna Skuse, *Surgery and Selfhood in Early Modern England: Altered Bodies and Contexts of Identity* (Cambridge: Cambridge University Press, 2021), chapter 6.
  - 53 Jennifer Montagu, *The Expression of the Passions* (New Haven: Yale University Press, 1994), 134.
  - 54 Benito J. Feijoo, “Importancia de la ciencia física para la moral,” in *Teatro Crítico Universal*, vol. 8 (1739), 378: “la concupiscencia tiene mucho de respectiva.” <https://www.filosofia.org/bjfb/bjft811.htm>.
  - 55 John Sutton, “Controlling the Passions: Passion, Memory and the Moral Physiology of Self in Seventeenth Century Neurophilosophy,” in *The Soft Underbelly of Reason: The Passions in the Seventeenth Century*, ed. Stephan Gaukroger (London: Routledge, 1998), 115–146, 138.
  - 56 Roy Porter, *Flesh in the Age of Reason: The Modern Foundations of Body and Soul* (New York: W.W. Norton and Company, 2003), 351. On Martín Martínez’s ideas about the nerves, see Alvar Martínez Vidal, *Neurociencias y revolución científica en España: La circulación Neural* (Madrid: Consejo Superior de Investigaciones Científicas, 1989).
  - 57 Willis also thought of a second mechanism of neuronal effects: “percussion waves within the fluid mass of particulate animal spirits.” Robert G. Frank, Jr. “Thomas Willis and His Circle: Brain and Mind in Seventeenth-Century Medicine,” in *The Language of Psyche: Mind and Body in Enlightenment Thought*, ed. G.S. Rousseau (Berkeley: University of California Press, 1990), 133–134.
  - 58 Claude Yvon, “Animal Soul,” *The Encyclopedia of Diderot & d’Alembert Collaborative Translation Project*, trans. Mary McAlpin (Ann Arbor: Michigan Publishing, University of Michigan Library, 2003), web, accessed 22 February 2024, <http://hdl.handle.net/2027/spo.did2222.0000.023>. Translation of “Ame des bêtes,” *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers*, vol. 1 (Paris, 1751), <http://hdl.handle.net/2027/spo.did2222.0000.023>. On the permanence of animal spirits during the long eighteenth century, see N. Wagner Darren, “Body, Mind and Spirits: The Physiology of Sexuality in the Culture of Sensibility,” *Journal for Eighteenth-Century Studies* 39, no. 3 (2016): 335–358.
  - 59 See Roy Porter, *Flesh in the Age of Reason: The Modern Foundations of Body and Soul* (New York: W.W. Norton and Company, 2003), 347–360, on David Hartley and his *Observations of Man, His Frame, His Duty, and His Expectations* (1749), who also believed in solid nerves. His ideas were previously presented in an earlier work: David Hartley, *The Progress of Happiness Deduced from Reason* (1734). We have left aside the question of whether Feijoo might have known this earlier text. On Feijoo’s ideas about the body behaving as a musical instrument, see Elena Serrano, “Touching the Soul: Nerves, Music, and Sex in the Physiology of Passions by B. J. Feijoo (1676–1764),” in “Touching Visions: Intersensoriality and Gender

- in the History of Science,” edited by Hansun Hsiung, Elena Paulino, and Elena Serrano, special issue, *Nuncius* 39, no. 2: 338–361 (2024).
- 60 Quoted in Anita Gerrini, *The Courtiers’ Anatomists. Animals and Humans in Louis XIV’s Paris* (Chicago: University of Chicago Press, 2015), 126.
  - 61 Benito J. Feijoo, “Racionalidad de los brutos,” in *Theatro Crítico Universal*, vol. 3 (1729), 187–223; on 217: “Pero aunque no es materia, es material el alma del bruto. ¿Qué quiere decir esto? Que es esencialmente dependiente de la materia en el hacerse, en el ser, y en el conservarse. Y esto se entiende por ente material *adjectivè*, a diferencia del ente material *substantivè*, que es la materia misma. Esta dependencia esencial de la materia en las almas de los brutos se colige evidentemente de que todas sus operaciones están limitadas a la esfera de los entes materiales; como al contrario la independencia del alma humana de la materia, se infiere de que la esfera de su actividad intelectual, incluye también los entes espirituales.” <https://www.filosofia.org/bjf/bjft309.htm>.
  - 62 Benito J. Feijoo, “Racionalidad de los brutos,” in *Theatro Crítico Universal*, vol. 3 (1729), 187–223, 215: “el conocimiento de los entes espirituales, el de las razones comunes, o universales, y el reflejo de sus propios actos. Estos tres géneros de conocimientos son privativos del hombre, y en ellos se distingue del bruto, como ya advertimos arriba.” <https://www.filosofia.org/bjf/bjft309.htm>. Feijoo also dealt with the animal soul in three other pieces: Benito J. Feijoo, “Guerras Filosóficas,” in *Teatro Crítico Universal*, vol. 1 (1726); Benito J. Feijoo, “Sátiros, tritones y nereidas,” in *Theatro Crítico Universal*, vol. 6 (1734), and in the same volume, “Examen filosófico de un peregrino suceso de estos tiempos (El anfibio de Liérganes);” Benito J. Feijoo, *Cartas Eruditas y Curiosas*, vol. 3 (1750): “Si es racional el afecto de compasión respecto de los irracionales.”
  - 63 See José Manuel Rodríguez Pardo, *El alma de los brutos en el entorno del padre Feijoo* (Oviedo: Pentalfa Ediciones, 2008); Robert Ricard, “Feijoo y el misterio de la naturaleza animal,” in *Cuadernos de Estudios del Siglo XVIII* 23 (1970): 7–22.
  - 64 See, for instance, Benito J. Feijoo, “Razón del Gusto,” in *Theatro Crítico Universal*, vol. 6 (1734), <https://www.filosofia.org/bjf/bjft611.htm>.
  - 65 G. S. Rousseau and Roy Porter, “Introduction: Toward a Natural History of Mind and Body” in *The Languages of Psyche: Mind and Body in Enlightenment Thought*, ed. G.S. Rousseau (Berkeley: University of California Press, 1990), 3–44, 3.
  - 66 Of course, we are considering here that observations are always theory-driven.
  - 67 Kazuo Ishiguro, *Klara and the Sun* (London: Faber & Faber, 2021), 338. See the reflections on this topic in the chapter by Isabel Burdiel, “Entangled Sensibilities and the Broken Circulation of Mary W. Shelley’s *Frankenstein*: Gender, Race, and Otherness.”

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