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## Franz Anton Mesmer and the Rise and Fall of Animal Magnetism: Dramatic Cures, Controversy, and Ultimately a Triumph for the Scientific Method

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In the late eighteenth century, Franz Anton Mesmer (1734–1815) promulgated “animal magnetism” as a pervasive property of nature that could be channeled as an effective therapy for a wide variety of conditions (Fig. 1). His claims of dramatic therapeutic success were supported by glowing testimonials, in some cases from socially prominent individuals. However, mainstream medical practitioners, professional societies, and political bodies rejected Mesmer and his treatment, and ultimately moved to eliminate Mesmer’s practice and that of his disciples. In retrospect it is clear that traditional physicians in the late eighteenth century had little to offer their patients therapeutically that had any real possibility of benefit,<sup>1</sup> and instead, often harmed their patients with their treatments, whereas Mesmer could demonstrate cases “cured” by his treatment that had previously failed all conventional approaches. While one might be tempted to dismiss his therapeutic successes as only applicable to hysterical

or imagined illness, some of his patients went on to lead quite functional lives when before they were deemed hopeless invalids, a point that even his detractors acknowledged.

### Mesmer and the Introduction of Animal Magnetism

Mesmer, a German by birth, studied medicine for 6 years in Vienna before presenting his dissertation for the degree of doctor of medicine in 1766. His dissertation, *De Planetarum Influxu* (“On the influence of the planets”) (Mesmer, 1766, 1980), attempted to relate the motion of the planets with effects in humans, but was largely plagiarized from a book published in 1704 by the acclaimed English physician Richard Mead (Pattie, 1956; Pattie, 1994). Mesmer’s dissertation is of consequence

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<sup>1</sup> As noted by Golub (1994, p. 55–57): “[Therapeutics] had not changed significantly during almost two millennia prior to 1800 . . . For all practical purposes, Galen and the gentleman physician of eighteenth century London or Paris treated patients virtually the same way.” The few effective preventatives or treatments available to eighteenth-century physicians included variolation for the prevention of smallpox (e.g., Boyslton, 1726; Franklin, 1759; Jurin, 1723; Massey, 1723; Montagu, 1717, 1861, 1970; Nettleton, 1722, 1723; Woodward, 1714) (and later vaccination with cowpox as introduced by Edward Jenner

at the very end of the eighteenth century), fresh fruit or fruit juice for the prevention and treatment of scurvy as recommended by James Lind (though largely ignored at that time) (Lind, 1753, 1762), cinchona for treatment of fevers and malaria (introduced from Peru by the 1600s), willow bark (containing salicin) for fever or pain (Stone, 1764), narcotics such as opium and laudanum (a tincture of opium) for pain (known to Hippocrates), marginally effective mercurials for syphilis (introduced perhaps in the late fifteenth century), and foxglove (containing digitalis) for “dropsy” (Withering, 1785).



FIGURE 1. Franz Anton Mesmer (1734–1815) promulgated “animal magnetism” as a pervasive property of nature that could be channeled as a universal cure for disease. He achieved his height of fame and fortune in Paris before his magnetic doctrine was demolished by the scientific evaluation of the Royal Commission in 1784. Courtesy of the National Library of Medicine

only in retrospect, because Mesmer subsequently cited it in an attempt to claim priority for his conceptualization of animal magnetism. Despite the later course of his career, Mesmer’s approach to medicine was basically orthodox during his first eight years of practice.

After his marriage in 1768 to a wealthy widow, Anna Maria von Posch, Mesmer was prosperous and socially well-positioned in Vienna, even to the point of entertaining the family of the young Wolfgang Amadeus Mozart (1756–1791) and perhaps staging the first performance of Mozart’s opera *Bastien et Bastienne* in his garden theater in 1768 (when Mozart was 12).

### The Hysterical Miss Österlin and a Treatment from Hell

A defining case for Mesmer’s career was that of Franziska (“Franzl”) Österlin, a 28-year-old woman with hysteria (she would now meet diagnostic criteria for somatization disorder) (American Psychiatric Association, 2000), who “since her

childhood, seemed to have a very weak nervous manner, had undergone terrible convulsive attacks since the age of two . . . [and] had an hysterical fever to which was joined periodically, persistent vomiting, inflammation of various visceral organs, retention of urine, excessive toothaches, earaches, melancholic deliriums, opisthotonos . . . blindness, suffocation, and several days of paralysis and other irregularities” (Mesmer, 1775, 1980, p. 26). Mesmer initially tried to treat the young woman in his home using “the most accredited remedies to counteract these different ailments . . . without, obtaining, however, a lasting cure, for the irregularities always returned after some time” (Mesmer, 1775, 1980, p. 26). Despite Mesmer’s efforts using orthodox medical treatments, including blistering, bleeding, and various medicines, no progress was made over a period of 2 years.

In late 1774, Mesmer was introduced to a new form of treatment with magnets by the Reverend Father Maximillian Hell (1720–1792), a Jesuit priest and the Austrian Astronomer Royal. Several months earlier, in June 1774, Hell had lent a heart-shaped steel magnet (magnetized by repetitive stroking with a lodestone) to a baroness afflicted with intractable abdominal pain. Four days later, the baroness was restored to health, and Hell ultimately concluded that the magnet had produced curative effects by acting on the nervous system. Hell suggested Mesmer try his magnets on Miss Österlin, who had suffered a relapse of hemiplegia in July 1774.

Taking Father Hell’s advice, Mesmer attached Hell’s magnets to Miss Österlin’s feet and another heart-shaped magnet to her chest with dramatic results.

She soon underwent a burning and piercing pain which climbed from her feet to the crest of the hip bone, where it was united with a similar pain that descended from one side – from the locality of the magnet attached on the chest – and climbed again on the other side to the head, where it ended in the crown. This pain, in passing away, left a burning heat like fire in all the joints. (Mesmer, 1775, 1980, pp. 26–27)

Despite pleas from the patient and Mesmer’s assistants that the treatment be terminated, Mesmer not only persisted, but added further magnets, continuing the treatment through the night. Gradually after the symptoms waned and ultimately disappeared, Mesmer pronounced her cured. Several subsequent

relapses were easily addressed with further magnetic applications, so Mesmer advised her to wear several magnets as a prophylactic.

A controversy over the distribution of credit for this apparent therapeutic success followed with a series of alternating public “letters” by Hell and Mesmer (Pattie, 1994). Father Hell published the first letter on January 6, 1775, reporting Mesmer’s successful application of the magnetic therapy to Miss Österlin, but claiming for himself the idea of treating such patients with magnets. Affronted by Hell’s attempt to take credit for the magnetic cure, Mesmer immediately published his account in the newspapers and as a pamphlet.

In his public rebuttal to Father Hell, Mesmer claimed priority for the concept of using magnets therapeutically, stating that he had written in his doctoral thesis in 1766 on a property of the animal body that makes it sensitive to universal gravitation, a property he said he had labeled “gravity . . . or animal magnetism” (Mesmer, 1775, 1980, p. 25). However, the term “animal magnetism” was not, in fact, used in the dissertation, and the property that was described (“*gravitus animalis*”) subsequently shifted in Mesmer’s usage from a force that acts upon the body to a property of the body itself (Pattie, 1994).

In any case, Mesmer claimed that Hell’s magnets were superfluous for the magnetic therapy, because virtually any object could be magnetized and used therapeutically.

I observed that magnetic material is almost the same thing as electrical fluid, and that it is propagated by intermediary bodies in the same way as is electrical fluid. Steel is not the only substance that attracts the magnet; I have magnetized paper, bread, wool, silk, leather, stones, glass, water, different metals, wood, men, dogs – in one word all that I touched – to the point that these substances produced the same effects upon the patient as does the magnet. (Mesmer, 1775, 1980, pp. 27–28)

Mesmer claimed to be able to fill bottles with this previously unrecognized magnetic material, and to direct it from a distance of 8–10 ft, even through other people or walls, so as to produce “jolts in any part of the patient that I wanted to, and with a pain as ardent as if one had hit her with a bar of iron” (Mesmer, 1775, 1980, p. 28). Despite the apparent brutality of the treatment, Mesmer was able to produce seemingly miraculous cures for a wide range of conditions.

By means of magnetism I restored menstrual periods and hemorrhoids to their normal condition . . . I cured hemoptysis, a paralysis following an apoplexy, an unexpected trembling after a fit of passion, and all kinds of hypochondriac, convulsive, and hysterical irregularities in the same way. (Mesmer, 1775, 1980, p. 28)

Mesmer proposed that “magnetic matter, by virtue of its extreme subtlety and its similarity to nervous fluid, disturbs the movement of the fluid in such a way that it causes all to return to the natural order, which I call the harmony of the nerves” (Mesmer, 1775, 1980, p. 29). But how could such a powerful force have escaped previous notice? Mesmer explained (conveniently so as to preclude refutation of his thesis) that such magnetic effects could not be perceived by healthy persons, but only by persons in whom “the harmony is disturbed” (Mesmer, 1775, 1980, p. 9).

## Failed Solicitations in Vienna

Around 1775, Mesmer sent statements of his ideas on animal magnetism to a majority of the academies of science in Europe and to a few selected scientists, inviting their comments (Mesmer, 1779, 1980). The only reply he received, from the Berlin Academy in March, 1775, was dismissive, arguing reasonably that: (1) Mesmer’s statements that magnetic effects could be communicated to materials other than iron and concentrated in bottles contradicted all previous experiments; (2) Mesmer’s evidence – based on “the sensations of a person afflicted with convulsions” (Berlin Academy quoted in Pattie, 1994, p. 45) – was not adequate or even appropriate for proving the existence of the postulated animal magnetism; (3) the absence of detectable effects in healthy persons made the report of “animal magnetism” highly suspect; and (4) other explanations could account for the results obtained in patients (and indeed the Academy suspected Mesmer had “fallen into the fallacy of considering certain things as causes which are not causes”) (Berlin Academy quoted in Pattie, 1994, p. 46).

Mesmer’s attempts around this time to demonstrate the effects of animal magnetism to physician-scientist Jan Ingenhousz (1730–1799) were even more negative and publicly humiliating (Mesmer, 1779, 1948; Mesmer, 1779, 1980; Pattie, 1994). While Mesmer demonstrated the magnetism of a single teacup in a group and elicited convulsions by pointing a magnet toward a relapsed Miss Österlin,

Ingenhousz surreptitiously tested the effects of strong magnets which he had concealed. Ingenhousz found that the patient reacted only to objects which she believed were magnets or that were connected with Mesmer. As a result, Ingenhousz publicly denounced Mesmer as a fraud. In response, an incensed Mesmer publicly attacked Ingenhousz's scientific ability and demanded a court-ordered commission to establish the facts concerning his treatment of Miss Österlin. Mesmer's treatment was ultimately observed for 8 days by a local hospital physician, but the physician became cold and indifferent, a response Mesmer attributed to the machinations of Ingenhousz who "succeeded in having those who suspended judgment or who did not share his opinion classed as feeble-minded" (Mesmer, 1779, 1980, p. 55). Mesmer then temporarily abandoned efforts both to obtain a court-appointed commission and to disseminate his treatment into hospitals.

### Controversy over Mesmer's Treatment of the Blind Miss Paradis

Through 1775 and 1776, Mesmer accumulated testimonials from several prominent individuals who reported being successfully treated by Mesmer, including Professor Bauer of the Vienna Normal School, Baron Hareczky de Horka, and Peter von Osterwald, Director of the Munich Academy (Pattie, 1994). However, controversies stemming from Ingenhousz's denouncement as well as Mesmer's failure to obtain public recognition from physicians, scientists, or scientific academies, caused Mesmer to attempt a dramatic cure of a difficult case, which he hoped would redeem his reputation and demonstrate to all observers the effectiveness of his discovery. Therefore, in 1777, Mesmer began treatment of the blind pianist, Maria Theresa Paradis (1759–1824), but the outcome of this therapeutic gamble was far worse for Mesmer than he anticipated.

Miss Paradis, the only child of a secretary to the Holy Roman Emperor Francis I (1708–1765) and Queen-Empress Maria Theresa (1717–1780), reportedly awoke with acute blindness at the age of 3 years and 7 months. She was treated by the most prominent Viennese physicians – with blistering plasters for two months, cauterization, leeches, purgatives, diuretics, and thousands of electric shocks through the eyes from discharging Leyden jars – but without the least success (Mesmer, 1779, 1980). She was ultimately

deemed incurable. Her parents tried to enrich the poor girl's life with music lessons, and she eventually became a talented singer and player of the clavichord and organ. The Empress attended one of her performances and became her patron when she was just eleven, providing her with a pension so she could continue her musical education.

Mesmer began treating Miss Paradis when she was 18 – at that time, totally blind with bulging eyes "so much out of place that as a rule only the whites could be seen" (Mesmer, 1779, 1980, p. 72), depressed, and with "deliriums which awakened fears that she had gone out of her mind" (Mesmer, 1779, 1980, p. 72). Under Mesmer's treatment, as attested by her father, she experienced trembling in her limbs, hyperextension of the neck, increased "spasmodic agitation in her eyes" (Mesmer, 1779, 1980, p. 72), severe head pains radiating to the eyes, dizziness, and other symptoms. Suddenly light bothered her eyes, and she was kept with her eyes bandaged in a dark room as "the slightest sensation of light on any part of her body affected her to the extent of causing her to fall" (Mesmer, 1779, 1980, p. 74). Only very gradually was she exposed to light and then was reportedly able to distinguish light and dark, as well as various colors, shapes, and faces, although with some reported distortion and limited understanding of what she saw.

She was frightened on beholding the human face: the nose seemed absurd to her and for several days she was unable to look upon it without bursting into laughter . . . Not knowing the name of the features, she drew the shape of each with her finger. One of the most difficult parts of the instruction was teaching her to touch what she saw and to combine the two faculties. Having no idea of distance, everything seemed to her to be within reach, however far away, and objects appeared to grow larger as she drew near to them . . . Nothing escaped her, even the faces painted on miniatures, whose expressions and attitudes she imitated. (Mesmer, 1779, 1980, p. 75)

Unfortunately, partial restoration of Miss Paradis' sight did not make her happy and threatened her financial support from the Empress. She became increasingly irritable, annoyed with the constant questions and testing, and prone to attacks of crying and syncope. Light bothered her, yet when her eyes were covered she became unable to take a step without guidance, whereas before, she was able to walk about her house in complete confidence. Her musical performances also suffered dramatically,



and her father fretted that her royal pension might be terminated. In addition, a prominent Professor of Diseases of the Eye, Dr. Joseph Barth (1745–1818), became convinced that Miss Paradis could not really see, undermining Mesmer's claims of therapeutic success. A fracas ensued between the parents, patient, and Mesmer, with the absurd chain of events reportedly including a convulsion by the patient, an angry mother throwing her head-first against a wall, a sword-wielding father loudly demanding Mesmer release his daughter, the mother fainting, the servants disarming the father, the father swearing oaths and curses, and a relapse into blindness, vomiting, and rages by the patient.

Still Mesmer kept the patient under treatment, even in opposition to the pleading of the chief court physician, saying that Miss Paradis could not be released without danger of death. Within a month, Miss Paradis' vision had again been restored and her health was improved, her father was apologetic, and the public was invited to witness her recovery. When the patient was ultimately released after nearly six months of care, though, her family soon reported that she was still blind and prone to convulsions. Mesmer bitterly responded (possibly correctly) that the parents had a conflict of interest and "compelled her to imitate fits and blindness" (Mesmer, 1779, 1980, p. 63) so as to retain her pension. In any case, Miss Paradis forever after lived the life of a blind person.

Following his ignominious public failure in the treatment of Miss Paradis, Mesmer found himself thoroughly discredited and derided in Vienna – with absolutely no supporters among the medical profession – and he ultimately left for Paris in January, 1778.

## Dissemination of Animal Magnetism: Lay Versus Professional Channels

### A Lucrative Practice in Paris

Mesmer arrived in Paris in February 1778 and, despite his previous humiliation in Vienna, quickly established an extremely lucrative practice, fostered by his charismatic personality and his unshakeable belief in the importance of his discovery of animal magnetism. Prerevolutionary Paris society was much more open than Vienna, and Parisians were periodically "carried away by sensational reports of novelties,

inventions, and scientific and medical marvels ... [making] Paris a fertile ground for dissemination of the magnetic doctrine" (Pattie, 1994: 69). Patients, many of them from the nobility and upper classes, flocked to Mesmer for treatment, even while others labeled him a charlatan who had been forced to flee Vienna (Pattie, 1994). Mesmer was soon operating at the top of the Parisian social pyramid, actively seeking patients and admirers of high prestige and ultimately collecting among his adherents Queen Consort Marie Antoinette (1755–1793), a fellow Austrian; Charles-Phillip, Count d'Artois (1757–1836), one of the two younger brothers of King Louis XVI (and later, himself, King Charles X); and Marquis de Lafayette (1757–1834), a young aristocrat who would later become an American Revolutionary War hero and proselytizer for mesmerism in America.

Mesmer was in fact so inundated with patients in Paris that he devised a method of mass treatment using various rituals and paraphernalia, including most notably a device called a *baquet*, a large wooden vat of "magnetized" water with 20 or so protruding bent metal rods (Fig. 2). The *baquet* was placed in the center of the magnetization room so that numerous patients could simultaneously stand or sit around it while applying the metal rods to their afflicted areas. Simultaneously, Mesmer and his assistants moved about the room directing magnetic energy at the afflicted, either with metal wands or manually: "Patients are magnetized by the laying of hands & the pressure of fingers on the hypochondria & lower abdominal areas; the contact often maintained for a considerable time, sometimes a few hours" (Franklin et al., 1784, 1997, p. 69). The flow of animal magnetism was facilitated further by having patients hold hands, by careful placement of mirrors (purportedly to reflect the magnetic energy toward the patients), by looping a knotless rope around them (as knots supposedly would impede the flow of the magnetic fluid), and by certain sounds (which also would communicate the postulated fluid). Ethereal sounds were provided either by a glass harmonica<sup>2</sup> (Finger, 2006), a piano or singing.

<sup>2</sup> A glass harmonica (or armonica) was a musical instrument invented by Benjamin Franklin that incorporated a series of graduated revolving glass bowls made to vibrate like water glasses by contact with the fingertips.



FIGURE 2. *The Magnetism*, drawn by Sergent, engraved by Toyuca, ca. 1785. Fashionable Parisians are shown participating in a group treatment or séance around a *baquet* (French for tub or vat), which is filled with mesmerized water. The therapeutic magnetism was purported to be transferred through the moveable iron rods protruding through the *baquet* to the ailing body parts, thereby resolving obstructions to the free flow of animal magnetism within the body. Some patients experienced convulsive crises (as in the woman on the right) and had to be carried off to a padded crisis room (background). Courtesy of the Bakken Library and Museum, Minneapolis

Responses to the magnetic treatment varied widely but were sometimes quite dramatic, in both Mesmer's practice and that of his followers. As noted later in the practice of one of Mesmer's disciples, "Some are calm, quiet, & feel nothing; others cough, spit, feel slight pain, a warmth either localized or all over, & perspire; others are agitated & tormented by convulsions" (Franklin et al., 1784, 1987, p. 69). Some patients experienced violent convulsions during the treatments, sometimes requiring further management in an adjoining padded room.

These convulsions are extraordinary in their number, duration, & strength. As soon as a convulsion begins, many others follow . . . some lasting for more than three hours . . . These convulsions are characterized by quick,

involuntary movements of limbs & the entire body, by a tightening of the throat, by the twitching of the hypochondria & epigastric area, by blurred & unfocused vision, by piercing shrieks, tears, hiccups & excessive laughter. They are preceded or followed by a state of languor & dreaminess, of a kind of prostration & even sleepiness. (Franklin et al., 1784, 1987, p. 69)

## Thwarted Dissemination Through Academic and Professional Channels

During his time in Paris, Mesmer sought testimonials attesting to the value of his discovery from the Royal Academy of Sciences (*Académie des Sciences*), the Royal Society of Medicine (*Société Royale de Médecine*), and the Faculty of Medicine (*Faculté de Médecine*), believing that these societies would confirm what his many patients and the general public already acknowledged *de facto*. However, Mesmer was repeatedly rebuffed or ignored.

An attempt to demonstrate animal magnetism before a meeting of the Academy of Sciences in early 1778 was received poorly and failed to convince any of the attendees. Later Mesmer was asked by two members of the Academy to demonstrate the utility of his supposed discovery by curing patients. Mesmer embarked on several months of treatment of a group of patients in a village near Paris, but Mesmer's subsequent entreaties for a review of the success of his treatment by the Academy were discussed and dismissed without a reply to Mesmer. There was indeed no way of validating any treatment response by interviewing or examining these patients at the end of their treatment – no clear baseline had been established, and other potential factors impacting on outcome (e.g., natural history of the conditions, placebo effects, etc.) had not been addressed.

Mesmer's subsequent attempt to solicit members of the newly founded Royal Society of Medicine fared no better. The Royal Society was responsible for oversight and regulation of new remedies, and on this basis its representatives suggested the appointment of a commission to investigate Mesmer's animal magnetism. However, Mesmer refused the Society's proposal on the grounds that he had no medicine to patent or license, that he did

not wish to trust the fate of his doctrine to commissioners unknown to him, and further that he did not wish his therapy lumped among the licensed drugs (that he undiplomatically alleged were nothing more than poisons). Instead, Mesmer entreated the society to simply accept the testimonials of his patients and “be witnesses of the salutary effects of my discovery, to assert its truth while rendering homage to it, and by this simple means to merit the gratitude of the nations” (Pattie, 1994, p. 82). After further haggling, the Royal Society and Mesmer at least temporarily agreed that he would treat patients previously certified by physicians of the Faculty of Medicine so that the success of his treatment could be judged; however, when the physicians charged with this certification had difficulty establishing the presence of disease in Mesmer’s patients, Mesmer doubted that they would be any less hesitant to certify the cures he anticipated *after* his treatments. When a commission was nevertheless appointed, Mesmer adamantly stated he would not even receive the commissioners, whereupon the society discharged the commission and terminated any further consideration of Mesmer and his treatment: the official response stated, “The commissioners whom the Society has appointed at your request to follow your experiments, cannot and should not render any opinion without having previously certified the condition of the patients by mean of a careful examination” (Pattie, 1994, p. 83).

Never very diplomatic, typically grandiose, and frequently somewhat paranoid, Mesmer in frustration charged that if his techniques were disseminated among even a small number of physicians, the rest of the medical profession would be forced to see him and his disciples as dangerous enemies who threatened their profits, and in their greed would attempt to undermine and destroy his doctrine (Pattie, 1994).

By 1780, Mesmer was able to recruit only one disciple of high professional and social standing – Dr. Charles d’Eslon or Deslon (1750–1786), who held the highest rank (*docteur-régent*) in the Faculty of Medicine and who was the personal physician (*premier médecin*) of Count d’Artois. d’Eslon observed Mesmer’s practice and became a true believer in Mesmer’s ability to cure patients using animal magnetism, although d’Eslon admitted he did not understand fully how Mesmer

accomplished this. d’Eslon tried to raise interest among members of the Faculty of Medicine and selected three physicians to observe Mesmer’s work every two weeks over a period of seven months. However, the doctors remained unconvinced and could not decide how many of the apparent cures could be attributed to treatment and how many resulted from spontaneous recoveries. When d’Eslon defended Mesmer to the Faculty of Medicine and wrote a book supporting Mesmer’s therapy (d’Eslon, 1780), the Faculty became openly hostile and unanimously censured d’Eslon. Mesmer nevertheless refused to acknowledge d’Eslon as a qualified disciple. Later, when Mesmer learned that d’Eslon had established a clinic of 60 patients where he produced cures using animal magnetism, Mesmer became enraged and charged d’Eslon with betrayal, breach of promises, and theft of his ideas and techniques.

### The Society of Harmony: Dissemination Through Lay Disciples

Nicolas Bergasse (c. 1750–?), an unhappy young lawyer, began seeing Mesmer as a patient in 1781 and believed that Mesmer significantly improved his health. So, with growing ambivalence and eventual resentment, Bergasse began serving Mesmer as an unpaid secretary, writer, and tutor of French. Bergasse wrote public defenses of Mesmer’s ideas (in much better French than Mesmer could muster), and became among the clearest expositors and disseminators of mesmerism, trying to establish a coherent doctrine from among Mesmer’s vague and inconsistent statements and writings. In 1783, Bergasse proposed and was the primary architect and developer of the Society of Harmony (*Société de l’Harmonie*), a secret society of wealthy patrons who paid handsomely to ensure Mesmer’s fortune and signed nondisclosure covenants with severe penalties for any breach, with the understanding that when sufficient subscriptions had been sold Mesmer would reveal his system to them for their own use. However, although Mesmer collected an incredible sum – some 400,000 *livres* – he continued to manipulate the members, while never fulfilling his verbal agreement. Still, such mesmeric societies proliferated across France and eventually spread to other countries.

## Evaluation of Animal Magnetism: The Royal Commissions (1784)

### Appointment of the Royal Commissions

The popularity of mesmerism alarmed the physicians and the government. The orthodox practitioners saw Mesmer – with his lucrative practice, his aristocratic patronage, and his recruitment of one of their most prominent members – as an economic threat to their own practices. The monarchy, nobility, and police also began to see mesmerism and its secret societies as a threat, especially as Bergasse and other revolutionary agitators in the Society for Harmony opposed the established order of the *ancien regime* and helped propagate subversive ideas (Darnton, 1968). The controversy over animal magnetism escalated with open dissention among Mesmer's disciples and increasing hostility from various academic and professional opponents.

Eventually, King Louis XVI (1754–1793), being less enthralled than his wife with Mesmer and his treatments, and concerned with the intensifying controversy, established a Royal Commission of the Royal Academy of Sciences and the Faculty of Medicine to evaluate Mesmer's claims (Franklin et al., 1784, 1997; Franklin et al., 1784, 2002). The distinguished Commission included four members from the Faculty of Medicine and five members from the Royal Academy of Sciences, including diplomat-scientist Benjamin Franklin (1706–1790), America's Minister Plenipotentiary to France, as well as chemist Antoine-Laurent Lavoisier (1743–1794), astronomer Jean-Sylvian Bailly (1736–1793), physician Joseph-Ignace Guillotine (1738–1814), Jean François Borie, professor Charles Louis Sallin, physician and chemist Jean Darcet (1725–1801), geographer and cartographer Gabriel de Bory (1720–1801), and physician Michel Joseph Majault (Duveen & Klickstein, 1955). A second commission was also established, drawn from the Royal Society of Medicine, but their report was largely redundant and will not be further discussed.

### Justification of the Commissioners' Investigative Approach

The Commission was charged “to examine & report on animal magnetism practiced by *Monsieur Deslon*” (Franklin et al., 1784, 1987, p. 68) and not

the practice of Mesmer himself. The rationale for this choice was not disclosed (Pattie, 1994), but Mesmer naturally objected: “I do not want him [d'Esilon] to determine the destiny of a doctrine which belongs to me, and whose importance and extent I alone know, I am bold enough to say . . .” (Pattie, 1994, p. 144). The Commissioners disagreed that there was any significant difference in the practices of d'Esilon and Mesmer, and in any case believed that their evaluation applied to the practice of animal magnetism in general and not to the specific practice of an individual practitioner:

These principles of M. Deslon are the same as those in the twenty-seven propositions that M. Mesmer made public through publication in 1779 . . . Now it is easy to prove that the essential practices of magnetism are known to M. Deslon. M. Deslon was for several years the disciple of M. Mesmer. During that time, he constantly saw the employment of the practices of Animal magnetism & the means of exciting it & directing it. M. Deslon himself has treated patients in front of M. Mesmer; elsewhere, he has brought about the same effects as at M. Mesmer's. Then, united, the one & the other combined their patients & treated them without distinction, & consequently following the same procedures. The effects correspond as well. There are crises as violent, as multiplied & as pronounced by similar symptoms at M. Deslon's as at M. Mesmer's; these effects therefore do not belong to a particular practice, but to the practice of magnetism in general. (Franklin et al., 1784, 1987, p. 83)

The Commissioners understood their purpose was:

to unravel the causes & to search for proofs of the existence & the utility of magnetism. The question of existence is primary; the question of utility is not to be addressed until the first has been fully resolved. Animal magnetism may well exist without being useful but it cannot be useful if it does not exist. (Franklin et al., 1784, 1987, p. 70)

The Commissioners judged that Mesmer's theory supporting the practice of animal magnetism was irrelevant to the question of whether the phenomenon actually existed.

If M. Mesmer announces today a more encompassing theory, there is no need whatsoever for the Commissioners to know this theory to decide on the existence and utility of magnetism. They had only to consider the effects. It is by the effects that the existence of a cause manifests itself; it is by the same effects that its utility may be demonstrated. Phenomena are known through observation a long time before one can reach the theory that links them & which



explains them . . . The theory of M. Mesmer is immaterial & superfluous here; the practice, the effects, it has been a question of examining these. (Franklin et al., 1784, 1987, p. 83)

They recognized that, “The most reliable way to ascertain the existence of animal-magnetism fluid would be to make its presence tangible” (Franklin et al., 1784, 1987, p. 70). However, the existence of the animal magnetism could not be proven by its physical properties, because the magnetic fluid was claimed to be an intangible agent.

[This] fluid escapes detection by all the senses. Unlike electricity, it is neither luminescent nor visible [as is lightning]. Its action does not manifest itself visibly as does the attraction of a magnet; it is without taste or smell; it spreads noiselessly & envelops or penetrates you without your sense of touch warning you of its presence. (Franklin et al., 1784, 1987, p. 70)

Thus, the existence of animal magnetism could only be determined by any effects it might have on human behavior or disease.

In 1780, on behalf of Mesmer, d’Eslon had proposed a comparative trial of animal magnetism versus conventional medical therapy to the Faculty of Medicine (Donaldson, 2005; Mesmer 1781, 2005), and in 1784, d’Eslon similarly advised the Commissioners to study principally the therapeutic effects of animal magnetism, but the Commissioners rejected an assessment of the effects of animal magnetism in the treatment of diseases. They acknowledged the existence of cases where seriously ill patients had not responded to “all means of ordinary medicine” (Franklin et al., 1784, 1987, p. 71) and yet had fully recovered after treatment with magnetism. However, it was impossible, the Commissioners reasoned, to separate the effects of spontaneous recovery from the effects of treatment.

Observations over the centuries proves [sic] & Physicians themselves recognize, that Nature alone & without the help of medical treatment cures a great number of patients. If magnetism were inefficacious, using it to treat patients would be to leave them in the hands of Nature. In trying to ascertain the existence of this agent, it would be absurd to choose a method that, in attributing to the agent all of Nature’s cures, would tend to prove that it has a useful & curative action, even though it would have none. (Franklin et al., 1784, 1987, p. 71)

To defuse potential arguments that the Commissioners had ignored the evidence that animal magnetism

cured disease, the Commissioners cited Mesmer’s own statement in this regard.

The Commissioners are in agreement on this with M. Mesmer. He rejected the cure of diseases when this way of proving magnetism was proposed to him by a Member of the Academié des Sciences: *it is*, said he, *a mistake to believe that this kind of proof is irrefutable; nothing conclusively proves that the Physician or Medicine heals the sick.* The treatment of diseases, therefore can only furnish results that are always uncertain & often misleading. (Franklin et al., 1784, 1987, p. 71)

Therefore, the Commissioners chose to restrict their investigations “to the temporary effects of the fluid on the animal body, by stripping these effects of all illusions possibly mixed up with them, & making sure that they cannot be due to any cause other than animal magnetism” (Franklin et al., 1784, 1987, p. 71).

## Observational Studies and Hypothesis Generation

The Commissioners verified the absence of an electrical charge or magnetic field associated with the *baquet* used during the group treatments:

The Commissioners used an electrometer<sup>3</sup> & a non-magnetic, metal needle to check that the vat did not contain any electrical or charged matter; and upon the declaration of M. Deslon [d’Elson] regarding the composition of the inside of the vat, they agreed that no physical agent

<sup>3</sup> The precise instrument used by the Commissioners is unknown. Various electroscopes and electrometers were in use at the time and the terminology employed was not consistent. Eventually “electroscope” was used for instruments that could detect the presence of an electrostatic charge, whereas “electrometer” was used for instruments that could quantify such charges. John Canton made one of the first portable electroscopes in 1754 (Canton, 1754; Herbert, 1998). This instrument utilized a pair of pith balls hung on linen threads, while later electroscopes utilized a pair of thin gold leaves attached to a conducting rod and held in an insulated frame. When a charge was applied to the instrument, the balls or leaves moved apart, due to mutual repulsion of like charges. In 1772, William Henley described a quadrant electrometer which utilized a single cork ball hung by a thread from a stem; when the electrometer was charged, the ball was repelled from the stem and the divergence of the ball from the stem was measured on a quadrant scale.

capable of contributing to the reported effect of magnetism was present. (Franklin et al., 1784, 1987, p. 69)

The Commissioners also observed group treatment sessions to familiarize themselves with the practice of animal magnetism, witness the range of apparent effects, and formulate their own initial hypotheses for the observed phenomena. They were absolutely astounded by the magnitude of the responses of patients during the séances:

Nothing is more astonishing than the spectacle of these convulsions; without seeing it, it cannot be imagined: & in watching it, one is equally surprised by the profound response of some of these patients & the agitation that animates others . . . All submit to the magnetizer; even though they may appear to be asleep, his voice, a look, a signal pulls them out of it. Because of these constant effects, one cannot help but acknowledge the presence of a great power which moves & controls patients, & which resides in the magnetizer. (Franklin et al., 1784, 1987, p. 69)

The Commission realized that the group séances were too complex to sort out the factors responsible for the observed effects. A simpler setting was needed in order to isolate and control the underlying factors: "The freedom to isolate the effects was necessary in order to distinguish the causes; one must like them have seen the imagination work, partially in some way, to produce its effects separately & in detail, so as to conceive of the accumulation of these effects, to get an idea of its total power & take account of its wonders" (Franklin et al., 1784, 1987, p. 82). Therefore, the Commission chose to observe the responses to the treatment of individual subjects separated from the communal psychological influences of the group treatment.

The Commissioners themselves were magnetized in a private setting so they could experience the effects, if any, firsthand. They were magnetized once a week by d'Eslon or a disciple in a separate room.

[They] stayed for two to two & a half hours at a time, the iron rod resting on the left hypochondrium, & themselves surrounded by the rope of communication, & from time to time making the chain of thumbs . . . they were magnetized, sometimes with the finger & iron rod held & moved over various parts of the body, sometimes by applying hands & finger pressure to either the hypochondria or on the pit of the stomach. None of them felt a thing, or at least, nothing that could be attributed to the action of magnetism. (Franklin et al., 1784, 1987, p. 72)

Nor did they experience any effects when they were magnetized for 3 days in a row. The contrast could not have been greater between the dramatic effects they observed among patients during the group treatments and the absence of effects they experienced during their own private treatments. They concluded that "magnetism has little or no effect on a state of health, & even on a state of slight infirmity" (Franklin et al., 1784, 1987, p. 72).

The Commissioners next observed the effects of private application of the magnetic treatment to sick patients. Of the first seven patients, all commoners, three felt some effects (e.g., local pain, headache, or shortness of breath), and four felt nothing. The next seven patients were "chosen from high society who could not be suspected of ulterior motives & whose intelligence would permit them to discuss their own sensations & report on them" (Franklin et al., 1784, 1987, p. 72) and *none* of these felt anything that could be attributed to magnetism. The difference, the Commissioners reasoned, stemmed from the commoners' expectations and desire to please.

Let us take the standpoint of a commoner, for that reason ignorant, struck by disease & desiring to get well, brought with great show before a large assembly composed in part of physicians, where a new treatment is administered which the patient is persuaded will produce amazing results. Let us add that the patient's cooperation is paid for, & that he believes that it pleases us more when he says he feels effects, & we will have a natural explanation for these effects; at the least, we will have legitimate reasons to doubt that the real cause of these effects is magnetism. (Franklin et al., 1784, 1987, p. 74)

The Commission observed that magnetism "seemed to be worthless for those patients who submitted to it with a measure of incredulity [and] that the Commissioners . . . did in no way feel the impressions felt by the three lower-class patients" (Franklin et al., 1784, 1987, p. 74). Therefore, the Commissioners hypothesized that the effects observed in the lower-class patients "even supposing them all to be real, followed from an anticipated conviction, & could have been an effect of the imagination" (Franklin et al., 1784, 1987, p. 74). The generation of this rival hypothesis to Mesmer's animal magnetism focused all subsequent investigations: "From now on, their research is going to be directed toward a new object; it is a question of disproving or confirming this suspicion, of

determining up to what point the imagination can be the cause of all or part of the effects attributed to magnetism” (Franklin et al., 1784, 1987, p. 74).

## Experiments to Decide Between Rival Hypotheses: Animal Magnetism and Imagination

To decide between the rival hypotheses, the Commissioners conducted a series of experiments, actively intervening to systematically isolate and independently vary each possible explanatory factor (e.g., magnetization, expectation, knowledge of the body part magnetized), while holding all other factors constant. By this experimental approach, the Commissioners demonstrated that magnetization had no effect: subjects developed the characteristic mesmeric crises if and only if they *expected* to be magnetized, regardless of whether they were actually magnetized.

By misleading subjects to believe they were being magnetized when they were not, the Commissioners were able to demonstrate the full range of mesmeric effects, including the characteristic crises. In one experiment the Commissioners seated a woman by a door and told her that d’Eslon was magnetizing her from the other side when in fact she was not being magnetized at all.

It was barely a minute of sitting there in front of that door before she began to feel shivers. A minute after that she started to chatter even though she felt generally warm; finally, after the third minute she fell into a complete crisis. Her breathing was racing, she stretched both arms behind her back, twisting them strongly & bending her body forward; her whole body shook. The chatter of teeth was so loud that it could be heard from outside; she bit her hand hard enough to leave teeth marks. (Franklin et al., 1784, 1987, p. 77)

Such demonstrations showed that the effects attributed to animal magnetism could be produced solely by suggestion in the absence of magnetization.

Demonstrations confirming that suggestion could produce apparently similar consequences to that achieved by practitioners of animal magnetism were not sufficient to falsify the rival animal magnetism hypothesis. To provide convincing evidence, the Commissioners conducted simple controlled experiments that would unambiguously support one

hypothesis while refuting the other (experiments probably designed mostly by Lavoisier with input from Franklin and the other Commissioners) (Duveen & Klickstein, 1955; Pattie, 1994). Predictions based on the logical consequences of each provisional explanation could be objectively tested by assessing the observed consequences of the experiments – assuming that the experimental methods were sound, correspondence between the predictions and observed consequences of experiment provided some support for the hypothesis, while lack of correspondence meant that the hypothesis should be rejected (Harré, 1981).

A woman – the door-keeper of Commissioner le Roy – felt heat or moving flames on whatever area of her body was magnetized, but the Commissioners found by blindfolding her that this correspondence was present only if she knew where the magnetization was applied: “when the woman could see, she placed her sensations precisely on the magnetized area; whereas when she could not see, she placed them haphazardly & in areas far from those being magnetized” (Franklin et al., 1784, 1987, p. 74). In further experiments, she experienced similar mesmeric effects even if *nothing* was done to her if she believed that she was being magnetized: “The results were the same, even though nothing was done to her from near or afar; she felt the same heat, the same pain in her eyes & ears; she also felt heat in her back & loins” (Franklin et al., 1784, 1987, p. 74).

Another young woman (previously established as magnetically sensitive) was invited to an apartment on the pretext that she was being considered for a job as a seamstress. There she conversed cheerfully with a female confederate of the experimenters while without her knowledge one of the Commissioners magnetized her through a concealed doorway for a half hour to no effect.

In Passy she had fallen into a crisis after three minutes; here she endured magnetism for thirty minutes without any effect. It is just that here she did not know she was magnetized, & in Passy she believed that she was. (Franklin et al., 1784, 1987, p. 78)

When the same Physician-Commissioner moved so that the patient was aware of his magnetization efforts, she was easily magnetized, even to a characteristic crisis.

[After] three minutes, [she] felt ill at ease & short of breath; then followed interspersed hiccups, chattering

of the teeth, a tightening of the throat & a bad headache; she anxiously stirred in her chair; she complained about lower back pain; she occasionally tapped her feet rapidly on the floor; she then stretched her arms behind her back, twisting them strongly. . . . She suffered all this in twelve minutes whereas the same treatment employed for thirty minutes found her insensitive. (Franklin et al., 1784, 1987, p. 79)

Suggestion was also enough to terminate the effects. Even when continuing the magnetization efforts, the Commissioner said it was time to finish.

[Nothing] therefore had changed, the same treatment should have continued the same impressions. But the intention was enough to calm the crisis; the heat & headache dissipated. The areas that hurt were attended to one after the other, while announcing that the pain would disappear. In this way, the [Commissioner's] voice, by directing the [subject's] imagination, caused the pain in the neck to stop, then in succession the irregularities in the chest, stomach & arms. It took only three minutes; after which [she] declared that she no longer felt anything & was absolutely back in her natural state. (Franklin et al., 1784, 1987, p. 79)

For another experiment, the Commissioners had d'Eslon magnetize an apricot tree in Franklin's garden in Passy, while four other trees were left nonmagnetized. According to the magnetic doctrine, "When a tree has been touched following principles & methods of magnetism, anyone who stops beside it ought to feel the effect of this agent to some degree; there are some who even lose consciousness or feel convulsions" (Franklin et al., 1784, 1987, p. 76). A young man, deemed by d'Eslon to be magnetically sensitive, was blindfolded, led to each nonmagnetized tree, and asked to hug the tree for 2 min. At the first nonmagnetized tree he experienced diaphoresis, coughing, and mild headache. At each successive nonmagnetized tree, he experienced progressively more severe effects with increasing dizziness and headache until he collapsed unconscious with limbs stiffened under the fourth nonmagnetized tree, 24 ft from the magnetized apricot tree. d'Eslon of course objected when the observed results conflicted with his predictions, but the Commissioners simply discounted d'Eslon's objections.

M. Deslon [d'Eslon] tried to explain what happened by saying that all trees are naturally magnetized & that their own magnetism was strengthened by his presence. But in that case, anyone sensitive to magnetism could not

chance going into a garden without incurring the risk of convulsions, an assertion contradicted by everyday experience. (Franklin et al., 1784, 1987, p. 76)

In a similar experiment, a magnetically sensitive woman was seen in Lavoisier's Arsenal and offered several cups of water, one after the other, only one of which was magnetized. With each successive nonmagnetized cup, she too experienced progressive effects until she developed a crisis with the fourth cup. When she then asked for some water to drink, a shrewd Commissioner passed her the *magnetized* cup from which "she drank quietly & said she felt relieved" (Franklin et al., 1784, 1987, p. 77). Later, while her attention was focused elsewhere, the same magnetized cup was held at the back of her head for several minutes, yielding no effect.

The experimental subjects were deliberately misled about the purpose and conduct of these experiments, and one subject was experimented upon without her knowledge or consent with a treatment that was reputed to produce painful crises. The Commissioners justified such actions by recourse to a higher authority (the King) and by weighing the anticipated benefits to the common good above the rights of individuals. As the Commissioners commented,

such examination requires a sacrifice of time, & much follow-up research which one does not always have the leisure to pursue for the purpose of instruction or satisfying one's own curiosity, or which one does not have even the right to undertake unless one is like the Commissioners charged by the King's orders & honored with the group trust. (Franklin et al., 1784, 1987, p. 82)

## The Commission's Conclusions

The Commission's evidence supported their hypothesis that the effects attributed to animal magnetism were due to the subjects' own expectations of magnetization ("imagination"), and clearly refuted any effect of animal magnetism. The Commissioners had successfully induced and terminated crises by manipulating only the subjects' imaginations, demonstrating that suggestion was sufficient to produce the effects attributed to animal magnetism. Magnetization itself produced no effects without suggestion. Thus the Commissioners concluded, "The experiments just



reported are consistent & also decisive; they authorize the conclusion that the imagination is the real cause of the effects attributed to magnetism” (Franklin et al., 1784, 1987, p. 78).

The Commission also criticized the genesis of the magnetic theory.

New causes are not to be postulated unless absolutely necessary. When the effects observed can have been produced by an existing cause, already manifested in other phenomena, sound Physics teaches that the effect observed must be attributed to it; & when one announces the discovery of a cause hitherto unknown, sound Physics also demands that it be established, demonstrated by effects that cannot be attributed to any known cause, & that can only be explained by the new cause. It would thus be up to the followers of magnetism to present other proofs & to look for effects that were entirely stripped of the illusion of the imagination. (Franklin et al., 1784, 1987, p. 78)

The Commissioners here effectively allude to Occam’s razor, the principle of philosophy that states that explanatory assumptions must not be invented or multiplied unnecessarily, and therefore the simplest hypothesis based on existing knowledge is best.

Beyond their devastating scientific critique, the commissioners had further concerns about the potential moral dangers of animal magnetism that they communicated in a separate secret report to the King (Franklin et al., 1784, 2002): the prolonged close physical proximity between the magnetizers (all men) and their patients (predominantly women), and the sensitive condition of the patients, made the Commissioners fear that the practitioners of animal magnetism could take improper advantage of their patients. This document had little impact though on the practice of animal magnetism as it was not published until long after animal magnetism was already abandoned in France.

## Abandonment of Animal Magnetism

More than 20,000 copies of the Commission’s report were rapidly and widely distributed. Publication of the report eroded much of Mesmer’s support base; greatly decreased his clientele; led to

a series of satirical pamphlets, books, and stage plays; and helped shift popular opinion from support to scorn and ridicule (Pattie, 1994). Furthermore, the Faculty of Medicine soon acted to suppress professional practice or support of animal magnetism by expelling any partisan members. Despite such favorable public and professional response to the report, Franklin was not confident that it was sufficient to cause the abandonment of mesmerism, as he confided to his grandson William Temple Franklin on August 25, 1784.

The Report makes a great deal of talk. Everybody agrees that it is well written, but many wonder at the force of imagination described in it as occasioning convulsions, etc., and some feel that consequences may be drawn from it by infidels to weaken our faith in some of the miracles of the New Testament. Some think it will put an end to Mesmerism, but there is a wonderful deal of credulity in the world and deceptions as absurd have supported themselves for ages. (Duveen & Klickstein, 1955, p. 299)

Proponents of animal magnetism mounted a campaign to counteract the Commission report, using a barrage of hundreds of lay articles and pamphlets, including critiques of the Commission report and compilations of testimonials, but this had little effect and interest in animal magnetism dissipated. Mesmer threatened to leave France to avoid the spreading conflicts but was persuaded by members of the Society for Harmony to stay at least temporarily so his departure would not imply his acquiescence to the Commission’s findings. Mesmer continued to practice animal magnetism for a short time in a greatly diminished capacity while trying to arrange an alternative evaluation of his own patient outcomes as opposed to those of d’Eslon. On April 29, 1785, eight months after the Commission report was published, Franklin wrote in a letter to Ingenhousz:

Mesmer continues here and has still some Adherents and some Practice. It is surprising how much credulity still subsists in the World. I suppose all the Physicians in France put together have not made so much money during the Time he has been here, as he has done. (Duveen & Klickstein, 1955, p. 301; Hirschmann, 2005, p. 832; Parish, 1990, p. 110; Pattie, 1994, p. 229)

However, Mesmer soon left Paris and lived the rest of his life in relative obscurity, ultimately dying in 1815 in Switzerland.

## Discussion

Animal magnetism was a failed or aborted therapeutic technology that gained temporary popular support but was never accepted by orthodox medicine. Certainly, during the period from 1778 until the Commission reports in 1784, animal magnetism was in vogue and accepted by a wide spectrum of Parisian society: patients flocked to Mesmer's clinic for treatment and willingly paid the high fees, in part because of Mesmer's self-confident, charismatic personality; the novelty and relative innocuousness of the treatment (e.g., compared with bleeding, blistering, and purging); and various public communication channels claiming dramatic efficacy in the face of treatment failures with orthodox medicine. However, although Mesmer was himself a physician, he failed to gain professional support or endorsement from colleagues or any medical or scientific societies. Mesmer did obtain the support of a single initially influential colleague (d'Eslon), but that colleague was then censured and ostracized by the medical establishment and subsequently denounced by Mesmer. Mesmer himself limited the dissemination of animal magnetism by seeking to maintain sole control of the practice; he never sanctioned anyone other than himself as adequately qualified to use animal magnetism therapeutically, but instead sought to acquire assistants and disciples with indefinite (and seemingly perpetual) periods of apprenticeship. Ultimately, animal magnetism was abandoned when its erroneous theoretical foundations were exposed.

Mesmerism had a limited resurgence in Britain in the 1840s and 1850s (Winter, 1998), in the United States in the early nineteenth century (Gravitz, 1994; McCandless, 1992; Roth, 1977; Tomlinson & Perret, 1974; Wester, 1976), and in Germany (Frankau, 1948). To this day mesmerism continues to resonate in numerous cultural echoes, in the form of carnival hypnotists, fringe healers, spiritualists, Christian Science,<sup>4</sup> continued belief in the therapeutic value of magnets (Shermer, 2002), mainstream

advertising,<sup>5</sup> movies (Spottiswoode, 1993), and indeed in the very fabric of language (e.g., with continued, albeit altered, usage of the terms "animal magnetism" and "mesmerize"). Webster's dictionary defines animal magnetism as "the power to attract others through physical presence, bearing, energy, etc. [or the] power enabling one to induce hypnosis" (*Webster's Universal College Dictionary*, 1997, p. 32), while mesmerize is defined as "to hypnotize ... to spellbind, fascinate ... [or to] compel by fascination" (*Webster's Universal College Dictionary*, 1997, p. 504); none of these definitions quite capture the eighteenth-century realities of Mesmer's treatment (e.g., the word "hypnosis" was introduced in the nineteenth century after Mesmer's death) (Braid, 1843; Kihlstrom, 2002).

## Was Mesmer a Quack?

Every era has had their "quacks" – fraudulent pretenders to medical skill, knowledge, or qualifications who operate outside of mainstream medicine and who are deemed by orthodox providers to be unqualified charlatans. Many in his era and subsequently have labeled Mesmer a quack or charlatan (MacKay, 1852, 1932; Pattie, 1994). Indeed, although Mesmer had the credentials of an orthodox physician, he certainly adopted many of the features of a quack (Mermann, 1990; Smith, 1985; Wolf, 1980): focusing on a single treatment as a panacea – claiming the treatment dramatically cures or alleviates suffering for a wide range of dissimilar conditions, including especially chronic, disabling, or stigmatizing conditions felt to be beyond the abilities of orthodox therapies; promoting the treatment outside of the conceptual framework of contemporary orthodoxy and unsupported by accepted medical doctrine; incorporating complex rituals or paraphernalia into the administration of the treatment; applying the treatment to individual patients without first establishing a clear diagnosis through accepted procedures; announcing the new treatment in the lay press before it is presented in the traditional medical literature; ignoring or actively avoiding formal investigation of the efficacy of the treatment, and producing instead

<sup>4</sup> Christian Science is a religious body founded in the 1870s by Mary Baker Eddy – a woman plagued with emotional and physical illnesses, who initially claimed she was cured by mesmerist Phineas Parkhurst Quimby in 1862.

<sup>5</sup> For example, the term "animal magnetism" has been used in advertising copy for animal-print lingerie by J. C. Penny and other companies (J. C. Penny Co, 2004).

testimonials of patients – particularly celebrities “cured” by the treatment – whose diagnoses were not appropriately established in the first place; advertising the treatment directly to the public and to nonprofessional disciples using publicity in the lay media to increase public demand; and employing unseemly self-promotion with apparent avarice.

Nevertheless, even with the distance of two centuries, Mesmer is not so easily categorized as a simple quack or charlatan. Indeed, some have questioned whether he was possibly a “sincere believer, deluded no less than his patients in mistaking the power of suggestion for the physical effects of an actual substance” (Gould, 1989, p. 16), and others have considered him a “thoughtful student of medicine” (Waterson, 1909), a “student of human nature” (Walsh, 1923, p. 88), a “scientific pioneer” (Eden, 1957, p. v), a “brilliant innovator” (Schneck, 1959, p. 463), a “blind prophet” (McGrew & McGrew, 1985, p. 200), and the “father of modern psychotherapy” (Frankau, 1948, p. 9).

Mesmer was indeed a complex figure with a number of faults, but he played an important role in understanding the effects of suggestion on the imagination, and was a pivotal figure in the history of psychosomatic illness, psychotherapy, and therapeutic hypnosis (Kihlstrom, 2002). Arguably even more important, though, was the role that he and his therapy played in shifting therapeutic evaluation from anecdotes and testimonials to a critical scientific methodology. Without being sufficiently threatening to established medical and political order, a Commission would not have been necessary.

The Franklin Commission provided a devastating attack on the theory of “animal magnetism.” The Commission focused not on the changes in health or quality of life of the treated patients, but instead focused on whether the supposed effects of animal magnetism could be consistently demonstrated, and on whether simpler explanations (e.g., suggestion and imagination of the subjects) could suffice to explain the observations. Unlike “mineral magnetism,” whose effects could be repeatedly and consistently demonstrated (e.g., by attraction of ferromagnetic materials, by lines of force shown with scattered iron filings, etc.), the Commission found that animal magnetism varied most obviously with the expectations of the subjects. Without evidence to support the very existence of animal magnetism, there was deemed little need to study treatment outcomes.

## The “Tomato Effect”: Was a Therapeutic “Baby” Thrown Out with the Magnetic Water?

Tomatoes are of South American origin and were introduced to Europe in the sixteenth century, but even through the eighteenth century tomatoes were not cultivated in North America, because, belonging to the nightshade family, they were presumed to be poisonous (regardless of obvious evidence to the contrary) (Goodwin & Goodwin, 1984). This historical curiosity explains the derivation of the so-called “tomato effect,” where an efficacious treatment is rejected because it does not conform to prevailing concepts of disease pathogenesis (Goodwin & Goodwin, 1984). In many historical cases, efficacious therapies were initially rejected if they did not make sense at the time, while physicians instead employed various placebos that were presumed to be efficacious based on contemporary concepts of disease pathogenesis and therapeutic action (Lanska, 2002). In this sense, the abandonment of animal magnetism under the impetus of the negative findings of the Commission can be considered as an example of the tomato effect to the extent that the therapy incorporated a therapeutically efficacious component, even if the theoretical basis was faulty.

Although Mesmer’s “theory” of animal magnetism was vague, mystical, largely incomprehensible, and scientifically unsupportable, one cannot discount that he held tremendous influence over his patients and disciples. His empirically developed psychotherapeutic techniques – even if lacking a supportable theoretical foundation – were certainly believed to be extremely beneficial by numerous patients, while orthodox medicine was not (Kihlstrom, 2002; Parish, 1990; Pattie, 1994; Perry & McConkey, 2002). Although one should not accept either such beliefs or the numerous collective anecdotes of (even sometimes dramatic) therapeutic benefit as being adequate evidence of efficacy of some aspect of the global treatment, it is fair to say that treatment outcomes per se were not actually scientifically assessed (Parish, 1990; Pattie, 1994; Perry & McConkey, 2002) as both Mesmer and d’Eslon bitterly complained.

Before the Commission report, d’Eslon (1780) acknowledged that he did not know how animal magnetism produced its effects, but

[If] Mr. Mesmer had no other secret than that of making the imagination act to produce health, would not that be a marvelous benefit? If the medicine of imagination is the best, why shouldn't we practice it? (d'Eslon, 1780, p. 46–47; Pattie, 1994, p. 105)

d'Eslon's concession was quoted by the commissioners themselves (Franklin et al., 1784, 1997, p. 82) as was d'Eslon's similar testimony during the investigation.

[d'Eslon] declared . . . that he believed he could in fact lay down the principle that the imagination had the greatest part in the effects of animal magnetism; he said that this new agent may be only the imagination itself, the power of which is so great that it is little understood: at the same time he certifies that he has constantly been cognizant of this power in the treatment of his patients, & he certifies also that several have been healed or remarkably relieved. He has remarked to the Commissioners that the imagination directed in this way toward the relief of human suffering would be a great blessing in the practice of Medicine. (Franklin et al., 1784, 1997, p. 82)

Benjamin Franklin, the titular head of the Commission, acknowledged (in a letter to La Sablière de la Condamine, on March 8, 1784, just prior to his appointment to the Royal Commission) that the imagination might be directed in a positive therapeutic sense and at the very least this approach was bound to be less toxic than the questionable therapies of the orthodox physicians.

As to the animal magnetism, so much talk'd of . . . there being so many disorders which cure themselves and such a disposition in mankind to deceive themselves and one another on these occasions; and living long have given me frequent opportunities of seeing certain remedies cry'd up as curing everything, and yet so soon after totally laid aside as useless, I cannot but fear that the expectation of great advantage from the new method of treating diseases will prove a delusion. That delusion may however and in some cases be of use while it lasts. There are in every great rich city a number of persons who are never in health, because they are fond of medicines and always taking them, whereby they derange the natural functions, and hurt their constitutions. If these people can be persuaded to forbear their drugs in expectation of being cured by only the physician's finger or an iron rod pointing at them, they may possibly find good effects tho' they mistake the cause. (Lopez, 1993, p. 327; McConkey & Perry, 2002, p. 324; Pattie, 1994, pp. 143–144)

Benjamin Rush (1745–1813) – the most famous American physician of the time and with

Benjamin Franklin a signer of the Declaration of Independence – while denouncing Mesmer's theory, acknowledged in 1789 in his "Duties of a Physician" (Rush, 1818) that Mesmer's global approach had therapeutic value even if his theory of its effects did not.

I reject the futile pretensions of Mr. Mesmer to the cure of diseases, by what he has absurdly called animal magnetism. But I am willing to derive the same advantages from his deceptions. . . . The facts which he has established clearly prove the influence of the imagination, and will, upon diseases. Let us avail ourselves of the handle which those faculties of the mind present to us, in the strife between life and death. I have frequently prescribed remedies of doubtful efficacy in the critical stage of acute diseases, but never till I had worked up my patients into a confidence, bordering upon certainty, of their probable good effects. The success of this measure has much oftener answered, than disappointed my expectations; and while my patients have commended the vomit, the purge, or the blister, which was prescribed, I have been disposed to attribute their recovery to the vigorous concurrence of the will in the action of the medicine. (Schneck, 1978, p. 10)

The commissioners also accepted that imagination or suggestion may have therapeutic value, but strongly disagreed with the way in which the imagination was directed toward violent crises by Mesmer and other practitioners of animal magnetism.

No doubt the imagination of patients often has an influence upon the cure of their maladies. . . . It is a well-known adage that in medicine faith saves; this faith is the product of the imagination . . . : the imagination therefore acts only through gentle means; through spreading calm through the senses, through reestablishing order in functions, in reanimating everything through hope. . . . But when the imagination produces convulsions, it acts through violent means; these means are almost always destructive. (Franklin et al., 1784, 1997, p. 82; McConkey & Perry, 2002, p. 322)

The commissioners felt that potentially harmful treatments should be applied only out of necessity and then judiciously so as to move the patient toward health, rather than indiscriminately, lest the treatment cause more harm than good.

[There] are some desperate cases where all must be disturbed in order to be put in order anew. These dangerous upsets may only be used in Medicine the way poisons are. It must be necessity that dictates their use & economy that controls it. This need is momentary, the upset



must be unique. Far from repeating it, the wise physician busies himself with repairing the damage it has necessarily produced; but at the group treatment of magnetism, crises repeat themselves everyday, they are long, violent; the situation of these crises being harmful, making a habit of them can only be disastrous. . . . How can one imagine that a man, whatever his disease, in order to cure it must fall into crises where sight appears to be lost, where limbs stiffen, where with furious & involuntary movements he batters his own chest; crises that end with an abundant spitting up of mucous & blood! . . . These effects therefore are real afflictions & not curative ones; they are maladies added to the disease whatever it may be. (Franklin et al., 1784, 1997, p. 82)

## Conclusion

The process by which animal magnetism was introduced, disseminated, evaluated, discredited, and abandoned remains instructive for the evaluation of therapies today.<sup>6</sup> Mesmer's animal magnetism was introduced as a panacea based upon a vague and poorly supported theory, supported by glowing testimonials, disseminated primarily through lay channels when support could not be obtained through professional channels, and ultimately formally tested – long after initial dissemination – when the therapy was already accepted by a significant segment of the populace. The Commission charged with investigating animal magnetism ignored Mesmer's poorly formulated theory and focused instead on the observable effects of the treatment. The methodology utilized by the

Commission was truly groundbreaking; whereas previous therapies were judged based on experience and authority, animal magnetism was evaluated using carefully designed controlled experiments. By actively intervening to systematically isolate and independently vary each possible explanatory factor, while holding all other factors constant, the Commissioners demonstrated that magnetization had no effect. Instead they provided strong support for their rival hypothesis that the observed effects were due to suggestion and the imagination of the subjects: subjects developed the characteristic mesmeric crises if and only if they *expected* to be magnetized, regardless of whether they were actually magnetized. The application of a scientific approach to the evaluation of therapies had rarely been applied and never before with such sophistication. The devastating arguments of the Commissioners unleashed a flood of satire and ridicule that eroded support for Mesmer and led to abandonment of animal magnetism as a treatment in France. Nevertheless, animal magnetism was subsequently briefly revived in other countries by disciples of Mesmer in the early nineteenth century, and distorted cultural echoes of this therapy persist today.

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<sup>6</sup>Throughout the ensuing nineteenth century, the effectiveness of medical treatments continued to be assessed primarily by the results of uncontrolled case series (Lanska & Edmonson, 1990), a process “fraught with difficulty, uncertainty, and error” (Moses, 1984, p. 709). Moreover, investigators often failed to identify a clearly defined group of individuals with a specific condition for study, disregarded the natural history of the conditions under study (particularly for conditions which may remit), failed to adequately consider placebo effects, did not establish objective measures of baseline status or degree of change in clinical condition with treatment, generally did not establish an otherwise similar untreated comparison group, and had no clear way of determining whether the results could reasonably have resulted from chance or bias (Lanska & Edmonson,

1990). Some increase in sophistication came with Pierre Louis' analytical method in the 1830s (Louis, 1836) in which he demonstrated increased mortality associated with early bloodletting in a retrospective case–control study of patients with pneumonia. However, with rare (and methodologically limited) exceptions, comparative prospective clinical trials were not employed until the twentieth century, thus allowing many ineffective and harmful traditional therapies to remain in routine use (e.g., bleeding, blistering, purging, and administration of highly toxic heavy metals) (Gehan & Lemak, 1994). Sadly, even today, ineffective therapies continue to be disseminated based on marginally supported theoretical rationales and such limited empiric evidence as a favorable case series before any formal experimental evaluation.

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