Charged with Feeling: Medical Electricity and the Social Incorporation of the Useful Citizen

The physician Henri Fouquet wrote in his *Encyclopédie* entry on sensibility, “The nature or essence of sensibility has always been a curious point and the most troubling of its history.”¹ This statement is no less true for historians today than it was for natural historians, physicians, and metaphysicians in the eighteenth century, but with a number of excellent analyses having emerged in the last few decades, we do seem somewhat closer to understanding the multifaceted nature of this crucial concept.

The best treatments of sensibility have focused on its status as a joint physiological, psychological, and literary construct, and it is from these studies that I take cues.² Yet if we are to take seriously the oft-repeated idea that there is a culture of sensibility, it is not sufficient to treat sensibility only in a textual sense. Sensibility also had a number of practical applications, and this paper will focus on eighteenth-century medical electrical treatments in order to investigate more fully the ways in which sensibility penetrated not only science and literature, but also politics, commerce, and the fabric of daily life.

In the 1740s, a first wave of medical electrical experimentation was executed under the supervision of the Académie des Sciences. These treatments, carried out on paralyzed military veterans at Invalides, were ultimately deemed a failure, and medical electricity fell out of favor


until the 1770s and 80s when Pierre Jean Claude Mauduyt de la Varenne, a member of the newly formed Société royale de medécine, began a series of intensive investigations.³

The case of medical electricity presents a privileged site for analysis for several reasons. First, medical electrical treatments focused primarily on paralysis and more specifically on restoring feeling and motion to individuals previously incapable of them. Given its close connection to sensibility, paralysis offers the historian a unique set of questions: What did it mean to lack feeling altogether? What was the social value attributed to feeling, and why was it deemed so necessary that those incapable of feeling be restored to it?

Secondly, debates about medical electricity were waged primarily under the auspices of two royal institutions: the Académie des sciences and the Société royale de médecine (SRM hereafter). These societies were viewed as the arbiters of medical electrical opinion, and their prerogatives were often entangled with the financial interests that supported their work: those of the state. Thus, the projects described in this chapter present an opportunity to analyze the formal, institutional, and royally sanctioned approach to sensibility.

Additionally, medical electrical treatments gain another layer of meaning when one pays attention to the identities of patients, many of whom were manual laborers or artisans. Physicians’ emphasis on their patients’ capacities for work raises additional questions about what commercial and political potential reformers saw in sensible projects. Individuals with non-normative sensibilities had previously been viewed as outsiders, and their care had become a significant financial burden on the state. Medical electrical treatment was in large part directed

³ This paper will not seek to explain the twenty-year silence between these episodes, but François Zanetti has explained it, at least in part, as the result of electricity initially being credited with too much medical potential. When it was revived later, he claims, medical electricity targeted specific ailments rather than illness tout court. (“L’électricité médicale dans la France des Lumières: Histoire culturelle d’un nouveau remède,” vol. 1 (Ph.D. diss., Université de Paris 10, 2011), 55, 67, 79, 80.
toward the reincorporation of such individuals into the social body, and while physicians
certainly sought to recuperate patients physically and morally, they also hoped to recuperate
them as political and economic subjects.

Finally, the archival materials on medical electricity fortunately (and highly unusually)
contain letters and reports written by patients about their own condition, permitting the analysis
of medical electricity from multiple perspectives. I do not wish to imply that elites forced new
methods onto unwilling bodies. The story is much more complex, and the availability of patient
reports helps bring such complexities to light.

**Electricity, Sensibility, and Paralysis**

At its most basic level, electricity was thought of as a subtle fluid that penetrated the
body through cutaneous transpiration. Its properties could “only be communicated by the
shaking and agitation of the tiniest of fibers,” instilling in the human body “a series of continual
oscillations.” In a word, electricity’s influence on the body was to animate it; by jolting fibers
into motion and restoring them to a proper speed and tone, electricity could stir what other
factors had slowed or stopped.

Electricity had many of the same physiological markers as sensibility: it agitated fibers,
operated like a fluid with movements similar to those of nervous fluid or animal spirits, and
suffused the body, affecting all animal and vital functions. In fact, the two concepts operated so
frequently in tandem and so analogously that some physicians thought them to be one and the

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4 Pierre Bertholon, *De l’électricité du corps humain dans l’état de santé et de maladie*, vol. 2 (Paris: Didot
same. This identity was by no means universally accepted, and some authors were reluctant to equate the two fluids, but at the very least, their conceptual closeness and analogical relationship is highly suggestive.

My dissertation covers the relationship between electricity and sensibility at much greater length, but for the purposes of this paper, it will suffice to say that electricity fell under the guiding influence of the discourse of sensibility, becoming a key means through which thinkers sought to manipulate individual particularities for collective ends. Projects for sensible management tended to focus on the adjustment of non-natural influences as a means of remedying imbalances in the sensible system. Electricity, which was closely connected to climactic non-naturals and those containing fire elements, was considered “the strongest irritant for the sensible and irritable parts of the animal body,” and it presented savants with a powerful agent of change.

While paralysis may seem like too specialized a condition to have widespread social effects, it was in fact an ideal starting place. For one, the category of “paralytic maladies” was much broader in the eighteenth century than it is today. In addition to the definition of paralysis as a loss of sentiment or motion, “paralysis” in the Enlightenment also applied to lethargy, comas, and what we would consider to be sensorial handicaps (deafness, muteness, blindness, etc.). In short, the term applied to any malady affecting the capacity for feeling or movement,

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6 Bertholon was one such author. See Zanetti, 18-19.

7 Pierre Bertholon, *De L’électricité du corps humain...* (Lyon: Bernuset, 1780), 39.

8 It also covered the categories of numbness, stupor, *goutte sereine* (an eye malady), and stopped periods, which were attributed to the blockage of humors. See “Maladie,” in *Encyclopédie ou Dictionnaire raisonné des*
meaning that a paralytic body presented the clearest case of a sensible system in need of management.

As the following case studies will show, the inability of paralytics to work was often presented as a drain on public resources and a detriment to public good. Thinkers hoped that through the electrical treatment of the body, individuals with physical handicaps like paralysis could be restored to a normative (or at least useful) condition and thus reincorporated into the social body. The manipulation of sensibility through medical electricity presented commercial and political goods as much as physical and moral ones.

The First Wave: The Académie des Sciences and the Hôtel des Invalides

While there were several preceding forays into medical electrical treatment, it was not until 1747-48 that the treatment came more strongly to the fore in the Académie des sciences. Inspired by the tentative efforts of Genevan physician Jean Jallabert, Académie members Jean-Antoine Nollet and Sauveur-François Morand proposed a series of experiments to be carried out on paralytic soldiers at the Hôpital des Invalides.

The choice of institution was not arbitrary, and several factors made the treatment of paralyzed veterans a priority for the Académie and the state. During the seventeenth century, the many veterans of Louis’ XIV’s protracted wars became public figures, begging on bridges and getting mixed up in street troubles. Partly because of a humanitarian stance that “those who freely risked their life and gave their blood for the defense and support of this monarchy” should

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be able to “spend the rest of their lives in tranquility,” and partly to prevent a negative public image of the royal army, Louis ordered the creation of a hospital for unwell soldiers in 1670.10

According to an ordinance registered at the Parlement de Paris on June 5, 1674, funds for the Hôpital would be drawn from payments to the Trésoriers Généraux, and “no endowments or donations, no bonuses that could be made for certain persons or various causes, should be received or accepted.”11 Such restrictions made clear from the outset that the institution was to be royally sponsored with no private intervention. Residents of Invalides were given clean housing, heating, innovative medical care, and adequate food, but in return, they were expected to work in the institution’s workshops.12 Louis XIV’s institution provided a means by which soldiers were cared for and kept off the streets, but Invalides was not tantamount to a retirement home. Just as the poor were not meant to be idle, neither were handicapped soldiers.

The only exempt parties were those soldiers wounded so severely that they could not work, and the most numerous group of unproductive soldiers were the manicros, or those “who, having had the misfortune of losing the use of their members, have need of being helped and served.”13 This special class, which included paralytics, was created on February 25, 1689, when Jean Dupuy, an armless soldier, was given four francs per month to hire another soldier to assist him.14 The group of manicros grew rather rapidly, and by 1713, the council declared that the number of manicros, “has grown so considerably that silver has become increasingly rare,” and

12 Stiker, 101.
14 Ibid.
decided to reduce the soldier’s pensions. Yet expenses kept mounting, and by the 1770s, *manicros* assistance was deemed “onerous to the Hôtel.”

From this perspective, *manicros* exerted a significant burden on the royal coffers, both because of their inability to contribute to the collective projects in Invalides’ workshops and their sheer numerousness. While some *manicros*, like those missing both arms, would never have been able to work in a manufactory, a cure for paralysis would have made it possible to employ the *manicros* who were only lacking in sentiment or movement. The financial burden that the government had taken on in becoming the sole backer of veteran care would be significantly alleviated if another royal institution, the Académie des sciences, could find a means of curing soldiers who were physically unfit for work.

The experiments at Invalides commenced on April 9, 1748, and Nollet and Morand selected four paralytics as test subjects. One of these subjects fell ill with an acute fever and pains throughout his body and passed away on 8 May, 1748, but not finding any connection between his death and the treatment, they continued treating the other three patients: Louis Daleur, Antoine Bardoux, and Sébastien Quinson.

Louis Daleur was forty-nine years old and had been paralyzed on the left side of his body for three years. Nollet and Morand began his treatment on April 9th, but ceased soon thereafter because they found his “joints to be knotted.” Antoine Bardoux was twenty-seven years old and paralyzed on the right side. His treatments lasted for fifty days, and on May 2nd, he reported

\[15\] Ibid.

\[16\] Ibid.

“re-feeling a lively jolt in the arm where he hadn’t had any feeling.” 18 While this may seem to be a sign of success, Nollet and Morand’s treatment journal admitted, “All the movements that have been mentioned in this Journal were not voluntary; they were excited by the effect of the electricity,” and disappointed with the results, “the paralytic tired of the experiments and there was even some difficulty in getting him to come for the last few days.” 19

The final patient, forty-eight-year-old Sébastien Quinson, was electrified for forty-one days. On April 16th, Nollet and Morand noticed that he had some finger movement, and on the night of the 17th, Quinson experienced pain throughout his arm. But on June 1st, Nollet and Morand stopped their trials for the same reasons that they stopped with Bardoux.

All told, these experiments lasted less than two months and did not restore sensation or movement to any of the patients. Despite the fact the experiments failed, Nollet and Morand were careful never to equate these unsuccessful trials with a failure of the method. In their words, “The effects of electricity are so singular and their variation depends on so many circumstances that we have simply undertaken an account of our experiments, without implying anything either for or against medical electricity.” 20 Ultimately though, this series of experiments did not address the problem of the rapidly growing class of manicros, and the Académie lost its interest in medical electricity until the SRM began its trials twenty years later.

Despite its failure, the episode at Invalides remains significant because it reveals a significant overlap between medical knowledge and political economy. While Invalides had not been established as a fully self-supporting enterprise, there was a definite expectation that residents would be productive and would in turn recuperate some of the money that the state put

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18 Ibid., 32.
19 Ibid., 35.
20 Ibid., 38.
into the institution. With a significant portion of its residents out of commission, the state’s return on its investment, so to speak, declined, and Invalides’ real operation costs mounted.

To bring such political economic stakes to light is not to deny that physicians like Nollet and Morand had a sincere humanitarian interest, but it is important to realize that the illnesses that commanded medical attention cannot be considered outside a broader set of political stakes. Just as modern scientific endeavors have to be studied “in action,” to use the terminology of Bruno Latour, so do the knowledge and practices that emerged out of royally sponsored institutions like the Académie des sciences.

The Second Wave: The Société Royale de Médecine

Headed by Félix Vicq d’Azyr, one of Turgot’s go-to men, and Joseph-Marie-François de Lassone, the first physician to the king and queen, the SRM was, from its establishment in 1778, an institution with direct political ties and immense power over medical commerce. Its creation marked the government’s endorsement of a single body as the arbiter of medical knowledge, and medical electricity formed one of the earliest topics over which the society exercised its power.

In 1778, the SRM charged Pierre-Jean-Claude Mauduyt de La Varenne with the task of evaluating the treatment’s utility. His tests involved a core group of eighty-two patients, most of whom were suffering from paralysis or paralytic maladies. In his reports to the SRM, Mauduyt placed patients’ abilities to perform their métiers front and center, and often, his measure the

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22 62% of Mauduyt’s patients suffered from paralysis, 11% from deafness, 7% from goutty rheumatisms, 5% from stupor and numbness, 5% from goutte sereine, 4% from stopped or missed periods, 3% from rheumatisms, and 2% from milky effusions.
treatment’s success was whether the patients could return to work.23 This emphasis indicates that the experiments largely aimed to restore individuals’ capacity for labor, a conclusion supported by an analysis of the patients’ métiers:

![Figure 1: Professions/ Family Situations of Mauduyt’s patients](image)

The majority of patients fell into the category of workmen or merchants, and of these, most had jobs that required manual labor.

Arlette Farge has remarked upon the eighteenth-century interest in the health of workers, which she has argued was part of a worldview in which the “dominant members of society” felt

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23 Several examples include the surgeon who suffered from confused ideas, facial pains, and a paralyzed hand who was restored to clear ideas and given a hand steady enough to bleed his patients and sign his name (“Observations sur les effets du traitement par l’électricité de Mauduyt: Mr De La Motte,” Académie nationale de médecine [hereafter ANM], SRM 118A, dossier 1), and the hairstylist who had been paralyzed but recovered enough sensibility in his fingertips to be able to comb again (ANM, SRM 118A, dossier 20).

24 Only seventy-nine patients are accounted for because of three individuals who were rather difficult to place: 1) Patient 54, “a rich man who had used a great many women,” 2) de Neuville, who performed “assiduous work that demanded a lot of application” and “a sedentary life,” and 3) “sieur Bodin.”
culpable for the condition of the worker. As a result, savants used their power to try ameliorate these conditions, and projects for social good, which often focused on workers, became oriented toward both charity and productivity. In the Enlightenment the humanitarian impulse was of a piece with the productive one, and Paris physician Philippe Hecquet made clear the ways in which moral, social, political, and economic order entwined with humanitarianism:

[The Poor] furnish a necessary contrast that makes humanity groan sometimes, but that honors the views of Providence….It is thus necessary to have poor people, but it is not necessary that they be miserable; these here are only the shame of humanity, those there, on the contrary, enter the order and the political economy: through them, abundance reigns in the towns…the Arts flourish.

The predominance of workers in the SRM’s treatment logs was not incidental, and the social composition of Mauduyt’s patient group reflected broader ways of thinking. If as Farge claims, “every discourse about bodies and sickness is ultimately a discourse about moeurs and order,” then medical electrical experiments demonstrate that the two main groups that needed moral and social ordering were workmen and the poor, two groups that often overlapped.

Jacques Necker, the Director General of Finances, approved Mauduyt’s trials, and the king accorded Mauduyt a three-year bonus to cover expenses. This royal allowance meant that

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26 Philippe Hecquet, La Médecine, la chirurgie et la pharmacie des pauvres (Paris: Lacherie, 1740); quoted in Farge, 999.

27 Farge, 1004. It is necessary to point out that the categories marked in the above chart do not necessarily imply a particular economic status. While the majority of individuals treated were workmen and merchants, there was no uniform economic condition among this group given that the financial standing of artisans and merchants varied considerably according to their trade. Furthermore, merchants from some guilds often belonged to what we would now consider the high bourgeoisie (cloth and silk merchants, apothecaries, and printers, to name a few), but in other guilds, the levels of condition and wealth varied greatly. And to add a final layer of complication, members of a guild all held the same basic occupational title (ex: limonadier), making it unclear whether particular limonadiers were those who made the liqueurs, sold them in their own shops, or both. Consequently, it can be difficult to draw definitive conclusions about the economic status of the individuals treated in Mauduyt’s experiments simply from a list of their professions. However, there are a number of factors that indicate that the SRM’s experiments were in large part oriented toward the poor, as the subsequent analysis will show.

“patients consequently ha[d] no need to make any type of payment,” ensuring that they could undergo experimental treatment regardless of financial standing.29 Given how many patients were manual laborers, this benefit was not negligible.

Not all of Mauduyt’s patients were poor, but he did try to keep the king’s funds set aside for those who could not afford treatment.30 Patient forty-six, Mlle Dieu, the daughter of a prosecutor, began treatment on July 24, 1778, but her mother stopped bringing her after eighteen sessions because Mauduyt wanted 3/= per week for the domestics he employed to help with the treatment. Describing the situation to the SRM, he opined, “It did not seem to me just to allot in such a case the king’s deniers that were destined only for the poor, four of whom are admitted free of charge right now and for whom I pay two domestics.”31 Thus, while the treatment may have been efficacious for a broader swath of the population and while Mauduyt was willing to treat wealthier patients, the target demographic was those who could not afford treatment.32

Reading the reports of the SRM, one might think that the treatment was universally viewed as successful, but archives include several pieces of correspondence that permit a privileged peek into patients’ expectations and experiences, many of which highlight the limits of the treatment that the SRM so vigorously supported. Several of these letters, such as that of M.

29*Journal de Paris*, no. 234, 22 August 1777, 2.

30 “Électricité medicale: lettre anonyme du 9 novembre 1778 à Vicq d’Azyr,”ANM, SRM 141, dossier 36, number 60.

31 ANM, SRM 118A, dossier 46.

32 Further evidence of this targeting comes from the implementation of these machines in institutions targeting the poor. Notably, in 1784, Louis Bénigne François Bertier de Sauvigny, the intendant of Paris, initiated a project to install medical electrical machinery at the Dépôt des pauvres de Saint Denis, and the Abbé Sans had convinced the government to install electrical pumps at Salpêtrière (“Extrait des journaux tenus au dépôt (des pauvres) de Saint-Denis…,” 1784, ANM, SRM 118B, dossier 97; “Lettre de Calone à Vicq d’Azyr, pour informer que le roi ayant ordonné de nouvelles expériences à la Salpêtrière…,” 7 December 1786, ANM, SRM 118B, dossier 101).
Beurlier the engraver, indicate a great desire to be restored to working condition, a desire that was very much in line with those of physicians. But in several other cases, such as that of M. Angeli, there was a marked divergence between patients’ and physicians’ perspectives.

In 1777, M. Angeli, an usher at Parlement who suffered from numbness and cold in his fingers, decided to undergo treatment. Interestingly, Angeli kept portions of his own journal, focusing for the most part on the types of electrification he underwent and the particulars of the feeling in his fingers. On the fourth session he reported, “…always the same coldness in the aforementioned fingers….I believe and hope, however gravely, that a bit of patience will dissipate it all.” Already downtrodden in tone, he continued treatment for forty-eight more sessions, experiencing no change in his condition. While Mauduyt and his colleagues continued to tout electricity as a successful method of treating numbness and counted M. Angeli among their success stories, it is certain that M. Angeli did not.

In fact, Mauduyt and his colleagues expressed satisfaction with a number of trials in which the patients quit prematurely because of a lack of results, lost sleep, fatigue, or a desire to return to life as usual. Many patients were sincerely optimistic about their treatments, but they often expected quicker or more dramatic results, and their conviction of its efficacy was not always as thoroughgoing as the SRM reports might suggest.

Conclusions

Taken together, this fifty-year span of experimentation tells us several key pieces of information about eighteenth-century social hopes, the place of sensibility in social reform, and how the affected individuals received these projects. For one, the political and social stakes of sensible reform become clearer through the lens of these trials. Scholars have previously noted

33 ANM, SRM 118A, dossier 3.
the direct relation between monarchist politics and royally sponsored institutions like the Académie des sciences and the SRM, but these analyses often focus on sinecures and other structural politics rather than on the deep political influence that guided the very types of problems that physicians tackled and knowledge they produced. In both waves of experimentation, administrators and savants worked side-by-side to curb social unrest and alleviate a significant financial burden on the crown, all through medical means.

As the SRM’s medical electrical projects developed, experimenters were careful to emphasize that treatment should be undertaken only under the watchful eye of the government [le gouvernement surveillant], a fact that highlights more strongly the political stakes at the center of these investigations.34 Medical electrical experiments, whether successful or failed, bound medical practice more closely to political prerogatives, making it possible for the government to view the treatment of the individual body as having direct financial, social, economic, and moral stakes.

The Enlightenment may not have had a fully articulated form of classical utilitarianism, but there was an emergent concept that morality could be tied into administrative practices and projects and that collective goods could be derived from individual experiences of pleasure and pain. Poorhouses, military institutions, and other places of rehabilitation had previously included a work component, but productivity came to the fore more strongly throughout the eighteenth century, becoming virtually synonymous with concepts of citizenship. Those who were unable to contribute were, in many ways, considered to be outside of society. New medical initiatives like medical electricity aimed at reincorporating such individuals, bringing them into the social fold

34 Esnue de Vallée, “Remarques raisonnées sur l’abus du magnétisme, sur l’utilité ou les dangers des autres remèdes nouveaux, spécialement sur l’électricité par Esnue de Vallée, médecin à Craon en Bas Anjou,” ANM, SRM 118B, dossier 86.
by reconfiguring their bodies. Reports on sensible manipulation expressed success through statements like, “The deaf woman began to hear well enough to be able to exist in society.”

Being able to feel, move, participate in a métier, support oneself: these were all forms of being a functioning member of society. In this light, then, medical electrical attempts to restore individuals to feeling could be seen as part of a larger goal of ensuring that all individuals fit within the social whole and functioned properly therein.

I do not wish to imply that productivity was the only social good at stake in sensible management; there are a number of other cases that more directly targeted affective, moral, and intellectual goods through the judicious application of non-naturals. But within the contexts of medical electrical treatment, thinkers’ concern with feeling had less to do with an affective component and more to do with the moral effects that tended to accompany the “outsider” status of an “unfeeling” individual. Social stability was threatened by the weakened moral status of those who were forced to beg or rely on charity, and savants were concerned with the amelioration of these concrete social defects through sensible, bodily means.

Crucially, the archives of the SRM prove that these projects were not imposed on unreceptive citizens. Many individuals sought out experimental treatment and some reported significant benefits. It’s difficult to say whether they approached the issue of unemployment from the same social angles as the SRM members, but many of Mauduyt’s subjects did express delight at the prospect of returning to work. While patients often did not see the same unlimited potential in the treatment that their physicians did, many expressed sincere gratitude for physicians’ efforts and for the financial support, housing, or medical care that came along with the royal allowances.

35 ANM, SRM 141, dossier 36, number 16.
Overall, medical electrical trials clearly illustrate the pervasiveness of sensible management as a means of social reform. Electricity adhered to many of the same characteristics as sensibility, relying on the interplay of internal and external factors, and it was through the influence of electricity that members of the Académie and the SRM sought to improve individual and collective bodies. Restoring a paralyzed individual to feeling would allow her to develop clearer ideas, move with ease, and experience lively sensations and emotions, all of which could be considered moral, social goods. But it also had real material effects if such individuals no longer had to rely on the resources of the government, the church, or individual donors.