

## 2. Specific treatises

### B. Methods

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#### 1. Chronological coverage

The subcategory of contains seventeen texts that concentrate on methods of medical diagnosis and treatment throughout the eighteenth century, although a somewhat higher proportion of documents come from the end of the period, reflecting an increase in the number of medical publications. Methods is an area where progress was fast in the eighteenth century: reliance was put on the works of contemporary authors and experiments, and this century also saw the beginning of statistical approaches. An exception to the innovative professional line of texts is a pseudo-Boerhaave text from 1743, whose old mode of thinking is connected with medieval traditions.

#### 2. Overview of the category

The works on methods portray the mainstream developments towards modern medical practices in the eighteenth century. For example, the following extract from John Wesley's *The desideratum: or, electricity made plain and useful* (1760) discusses the relation of new facts and hypotheses in an illustrative way. It emphasizes the importance of testing probable hypotheses, with numerous experiments carried out by himself and his contemporaries:

- (1) Of the Facts we are absolutely assured: Altho' they are of so surprizing a nature, than a man could not have asserted them a few Years ago, without quite giving up his Reputation. But who can be assured of this or that Hypothesis, by which he endeavours to account for those Facts? Perhaps the utmost we have reason to expect here, is an High degree of Probability.

(Wesley, *The desideratum: or, electricity made plain and useful*, 1760: iii)

Topics in METHODS range from the traditional subjects of urinoscopy and waters to novel fields and important innovations such as inoculation, electric healing, pneumatic medicine, and magnetic therapy. Four texts are related to waters and their therapeutic uses (see also THERAPEUTIC

SUBSTANCES). In *The curiosities of common water* (1723), John Smith argues that water can be used as a universal remedy, and he goes through various diseases and specific cures. The work was popular throughout the eighteenth century, as adapted editions and translations were published as late as in 1799. James Currie's treatise *Medical reports, on the effects of water* (1797) is concerned with temperatures and the effects of cold and warm water to cure fevers. Observations on the clinical use of the thermometer aim at giving accurate advice for treating naval diseases. A further text related to waters is John Anderson's *A preliminary introduction to the act of sea-bathing* (1795) which became a fashionable cure at the end of the century. Anderson was the director of the General Sea-bathing Infirmary at Margate, but does not present sea bathing as a universal panacea but as treatment that required precautions and consultation with experienced physicians (see also Chapter 2 in this volume).

Water had its more serious dangers as well, and drowning was an important theme in European medical literature in the eighteenth century. *A physical dissertation on drowning* (1746) by Rowland Jackson advocates the need for better medical knowledge about death and the question of premature burials. Such polemical writing reflects the development of the "humane movement", as the optimistic spirit of the Enlightenment found its expression in philanthropic societies established in the eighteenth century (see PUBLIC HEALTH). For example, the purpose of The Royal Humane Society (*act.* 1774–*c.* 1808) was to advance resuscitation techniques and help to establish it as a medical practice.

The method of inoculating against smallpox was an important invention of the eighteenth century, as smallpox was a lethal disease which killed at least one fifth of the infected (see Category description 2a). The infection was in time combated by inoculating smallpox pustules into the skin in order to cause a mild infection that made the person immune to the disease, although at times inoculation caused severe infections which resulted in death. Inoculation against smallpox was introduced into England in 1721 by Lady Montagu, who had become acquainted with it in Constantinople and requested to have her daughter inoculated after returning to England (see further, e.g. Bazin 2011: 30 ff. and Chapter 9 in this volume). Although the first inoculation was successful, death occurred after some later attempts and the debate about inoculation waged throughout the century. This subcategory includes three texts on inoculation. The earliest work, James Jurin's *An account of the success of inoculating the small pox in Great Britain* (1724), mentions the heated debate on the topic and refers to the Matter-of-Fact principle, which was a cornerstone of the new science:

- (2) THE Disputes about the Practice of Inoculating the SMALL POX, like many of our other Differences, have been carry'd to so great a Height, that it is difficult for any one

to write upon this Subject, without being drawn into Controversy, even tho' he delivers only Matter of Fact, or the undeniable Consequences drawn from it, and that with the greatest Impartiality, and the strictest Regard to Truth.

(Jurin, *An account of the success of inoculating the small pox in Great Britain*, 1724: 1)

Jurin was a surgeon and a physician and the first to discuss inoculation from the statistical point of view, comparing the numbers of people dying of the disease with those dying of inoculated smallpox (Rusnock 1995: 297). The positive view of inoculation won the battle around 1740 (Bazin 2011: 37), and an anonymous corpus text *Inoculation made easy* (1766) introduces a method of self-inoculation. The method consists of a preparatory diet and powders before the inoculation.

- (3) After the Patient has sufficiently prepared himself by strictly following the Directions for the Regimen; that is, having Dieted himself one Week, and the next Week dieting as before, and taken his POWDERS, he is now fit for Inoculation, which is very easily perform'd as follows: You must get some Matter out of a Ripe Pock upon the Point of a Needle, sharp-top Pen-knife, or Launcet, and with any of these Instruments (having the fresh Matter on its point) you must make a small Incision or Prick on the Arm, between the Elbow and the Shoulder; you need only make the smallest Drop of Blood appear, and wiping the mattery Part of the Instrument on the Place, 'tis done.

(*Inoculation made easy*, 1766: 9)

The treatise continues with a description of what kind of pustules will appear on the arm. An important step against the smallpox was taken at the very end of the eighteenth century, when Edward Jenner showed that cowpox infection gives immunity to smallpox, and he introduced the method of inoculating cowpox to prevent smallpox infection (Williamson 2007: 80; Bazin 2011: 60–). His *An inquiry into the causes and effects of the variolæ vaccinae* (1798) contains various case studies complemented with general observations on inoculation and the general course of the disease.

Electric experiments and demonstrations attracted attention and became applied to medicine in the middle of the eighteenth century. John Wesley's *The desideratum: or, electricity made plain and useful* (1760) concentrates on the effect of electricity in the universe and in the human body and introduces machines that were used to give electric shocks to cure various diseases. Wesley was a Church of England clergyman and is known as a founder of Methodism but he also wrote on medical topics: the book is based on the author's experiments and works of contemporary authors

on electricity, such as Benjamin Franklin and Richard Lovett. In the preface to his work, Wesley considers electric shocks as a common cure for most diseases:

- (4) Indeed there cannot be in Nature any such Thing as an absolute *Panacea*: A Medicine that will cure every Disease incident to the human Body. If there could, Electricity would bid fairer for it, than any Thing in the World: ...

(Wesley, *The desideratum: or, electricity made plain and useful*, 1760: v)

As a theologian, Wesley was interested in relieving the suffering of the poor, and hence he emphasized that electric healing is inexpensive. Electric cures offered by physicians became more popular both among the higher and the lower social classes towards the end of the eighteenth century (see Bertucci 2006: 353; Schwab 2012).

Herman Boerhaave's *An essay on the virtue and efficient cause of magnetical cures* (1743) deals with magnetic therapy and the work presents a method of healing wounds with a specific ointment. The title page attributes the text to Boerhaave, but it is doubtful whether he was the author.<sup>1</sup> The text defines magnetic cures as follows:

- (5) The Examination and Knowledge of these Qualities and hidden Virtues in Nature, is call'd natural Magick, founded upon the Sympathies of Things, and who is acquainted with the Concord or Discord therein, is call'd skilful in Magicks, and able to produce many marvelous Effects, appearing to the Vulgar to be contriv'd by the Help of Daemons; though this Mystery is nothing else, but a Science of the Sympathies and Antipathies between superiour and inferiour Things.

(Boerhaave, *An essay on the virtue and efficient cause of magnetical cures*, 1743: 9)

The method requires “a thorough Knowledge of the Concord or Discord between Stones, Herbs, Minerals, Animals, and the Stars”, and the work advises, for instance, engraving the figure of Jupiter on a white stone to promote health and happiness (Boerhaave, 1743: 24, 28). The subcategory also includes an anonymous work on *A practical display of the philosophical system called animal magnetism* (1790), a practical guide for beginning healers (see below). Animal

<sup>1</sup> The *English Short Title Catalogue*, for instance, mentions that Boerhaave is probably not the author, although his name is printed on the title page.

magnetism was based on healing by mental powers, relying on the idea that diseases are cured by an invisible flow which is present in all living creatures.

Pneumatic medicine was a new method in the eighteenth century, and it became possible after the components of air and the main gases had been recognized in the mid-eighteenth century (see Stansfield & Stansfield 1986: 279). Thomas Beddoes's work *Considerations on the medicinal use, and on the production of factitious airs* (1795) discusses different gases or "factitious airs" that are inhaled with the help of a specific machine and used to cure lung diseases and especially consumption. Beddoes's work recounts (animal) experiments made with oxygen and hydrogen among other gases and contains many case studies; the second part of the work is written by James Watt, an engineer who worked on different versions of the machine. Beddoes established a Pneumatic Medical Institution in Bristol in 1799. The institution became known for the use of nitrous oxide or "laughing gas", and it also advanced the study of other gases (Stansfield & Stansfield 1986: 278). Several revised editions of *Considerations on the medicinal use, and on the production of factitious airs* were published at the end of the eighteenth century, reflecting the increasing knowledge of pneumatic medicine and pulmonary diseases.

This subcategory further includes other works on new medical practices. Peter Clare's *A practical treatise on the gonorrhoea* (1783) presents a method of curing *lues venerea* by rubbing calomel inside the mouth. In addition, John Catherwood opposes ancient authorities in *A new method of curing the apoplexy* (1715) and argues that the disease can be treated by arteriotomy and using motion to improve circulation instead of phlebotomy. D. Merande's *A succinct account of a machine, newly invented for the cure of præternatural curvatures of the spine* (1768) focuses on his method of healing "preternatural curvatures of the spine" in children by using a whalebone bodice, a specific machine and a swing that extends the spine.

Two texts deal with impaired senses and suggest technical aids. James Ayscough discusses glasses in *A short account of the nature and use of spectacles* (1750) and advises how to recognize quality lenses. He offers a series of tests to choose and compare glasses: "I shall now lay down some Rules, by which every one may chuse not only good Glasses in their Kind; but such too, as are best suited to the Form and Shape of their own Eye" (Ayscough 1750: 8). Ayscough further introduced a new glass that he advertised as being harder than earlier lenses and tinted to block reflection (see further Gee 2014: 41). Andreas Büchner's *An easy and very practicable method to enable deaf persons to hear* (1770) explains the anatomy of the ear and defects in hearing. The work further recounts

earlier works and presents a method to make deaf persons hear by holding a glass or tube against the teeth so that the vibration is “heard” by the deaf person.

### 3. Authors and audiences

Most of the authors in METHODS were educated writers, physicians or surgeons, with an M.D. degree, such as Thomas Beddoes (*Factitious airs*, 1795) and James Currie (*Effects of water*, 1797). Consequently, most works in this subcategory are aimed at professional readers, the “Faculty” and “Gentlemen of this Class” (Catherwood, *A new method of curing the apoplexy*, 1715: 10; Jackson, *A physical dissertation on drowning*, 1746: 3–4; see below). Jackson targets his *A physical dissertation on drowning* (1746) at peers. He refers to the knowledge of “the best Authors”, “the most candid witnesses”, “public Archives” and “numerous Facts” (1746: 3) as support to his argument that people can retain life after being under water for even hours or days; after these statements, he continues to support his arguments with case studies.

The addressees of the texts vary from highly professional audiences to lay people, and some works are aimed at a wide readership. An example is *A short account of the nature and use of spectacles* (1750) by Ayscough, an optician and manufacturer of microscopes, discussed above. The main aim of his work is to appeal to prospective customers and advertise his optician’s shop and spectacles. The anonymous guidebook *Inoculation made easy* (1766) is also targeted at the general public and defines its purpose as giving instructions for lay people to inoculate themselves with ease and safety “FOR THE BENEFIT Of Masters and Mistresses of FAMILIES, and the Public in General” (1766: title page). The text continues with an advertisement for the accompanying free medicines that will prevent the contagion for those who do not want to be inoculated. Another treatise meant for self-taught practitioners and lay people is *A practical display of the philosophical system called animal magnetism* (1790) by an anonymous author. The work continues the healing method called by that name and founded by the German physician Franz Mesmer. The work gives advice for treating a variety of diseases such as headache and sore eyes by holding one’s hands over the afflicted body part. The work does not discuss the theory but focuses on practical instruction.

The authors often point out to lay readers that their methods are not based on quackery, and they set themselves strictly apart from impostors. T. Hicks (1703), for instance, makes a distinction between social classes in his *A compleat treatise of urines*. He dedicates his work to Mr. Arthur Heron, Rector of Moreton, Essex, and he writes about the “Vulgar” in a contemptuous way, explaining his

motivation, aim, and method of writing the book (Hicks, *A compleat treatise of urines*, 1703: the Preface, unnumbered). Hicks refers to “Quacking *Medicasters*” (1703: A2) and similar negative descriptions are found in many other works, e.g. Catherwood (*A new method of curing the apoplexy*, 1715: 23) refers to “Chip-in-Pottage Doctors”.

#### 4. Discourse forms and genres

The works on methods rely on argumentation with interactive styles of writing as well as on instruction and exposition with statistical information. Many authors explain in detail their method of performing a certain cure through instruction (see example 3 above). The traditional discourse form in scientific texts from Antiquity relied on questions and answers, but appeared in a renewed form in writings in the previous century with imagined objections (see Taavitsainen 1999). They are also common in the first half of the eighteenth century, e.g. Hicks leads his readers very carefully through the argument:

- (6) Therefore it seems not improbable, that forthwith a thinner part of the Nourishing Liquor (that’s receiv’d into the Stomach) consisting of some Spirit and espeially Water, is imbib’d by its Membranes, like a Spunge, and thence instill’d into the Mouths of the Veins, and is presently mixt with the Blood in its return to the Heart. For many are of this opinion, ... Now since the far greater part of Blood is carry’d upward... Many arguments make for this, which to recite, were too large a digression from my present scope; wherefore I think ’tis in some measure after the manner aforesaid, that we piss such a pale waterish *Urine*, so soon after drinking.

(Hicks, *A compleat treatise of urines*, 1703: 10–11)

The above passage contains features of old scholastic style with conjunctions and connectors (*therefore, wherefore*) and the passive voice (Taavitsainen and Pahta 1998). Illustrative images (*like a Spunge*) make the text more vivid and the discourse marker *now* is employed to emphasize the ensuing point (see Taavitsainen & Hiltunen 2012), but there are also hedges such as *it seems not improbable*. Some other texts adopt an interpersonal stance with overt objections, prescriptive phrases, and imperatives, as well as more personal guidance in the first-person singular, addressing the reader with the second-person pronoun *you*. The tone of Catherwood’s texts from 1715 is in accordance with the seventeenth-century Royal Society style:

- (7) Tho I'm well assur'd this Hypothesis will be exploded by the greatest part of the Faculty, it being not only what is uncommon, but also their being unacquainted how the Operation is to be perform'd, and the hazard of attempting it, will occasion the following Objections, to render this Method trifling and inconsiderable.

(Catherwood, *A new method of curing the apoplexy*, 1715: 10)

Jurin (1724) introduces a new way of dealing with numerical evidence to support his arguments, but as a backdrop he employs the old text strategy with imagined objections in dialogue with those who oppose the new method:

- (8) From the Facts here laid down, I am sensible the Inoculators will raise several Objections against the Estimate of the Hazard of Inoculation, which I have given above, and to do them Justice, I am obliged to lay what are, or may be their Arguments, before the World.

(Jurin, *An account of the success of inoculating the small pox in Great Britain*, 1724: 26–27)

He continues with brief statements using parallel structures (see Chapter 2). In contrast, the anonymous inoculation text *Inoculation made easy* from 1766 gives instructions in the second person *you* with deontic modality (*must, need*).

The same interactive argumentation pattern is found in the mid-century in the *A physical dissertation on drowning*: “If it should be ask'd, whether these Animals, during such a State, retain a real Principle of Life? I answer, that the Thing is not only probable, but may be also evinc'd from Fact and Experience...” (Jackson 1746: 25). Jackson writes, moreover, in a polemical, provocative and somewhat ironical tone of voice.

- (9) Besides, I would have the Gentlemen of this Class remember... In a Word, the wise and thinking Part of Mankind will always be induc'd to give their Assent to Facts seen by a sufficient Number of Witnesses, who have Sense enough to guard against Imposture themselves, and Honesty enough to say nothing but what is Truth to their Neighbours.

(Jackson, *A physical dissertation on drowning*, 1746: 3–4)



This style is not as prominent in later texts. Instead, a programmatic declaration for a simple style of writing is found in the anonymous *Inoculation made easy* (1766). Although the text is intended for the public at large, the preface is obviously targeted at a learned readership familiar with Latin. The motto *ne plus ultra* refers to the traditional limits of knowledge. It was replaced with the more optimistic form *plus ultra* with the new science (Shapin 1996: 20).

- (10) *Salus Populi*, I think, will hold good in the Matter, and to answer this Purpose more effectually I shall omit all set Phrases and technical Terms; ... Humane it must evidently be, to point out a certain, plain, and infallible Method of relieving the Distresses of our Fellow-Creatures; few Disorders having produc'd more public Calamity than that loathsome Distemper, and from Time to Time, the most eminent Physicians have on those Occasions found themselves at their *ne plus ultra*.

(*Inoculation made easy*, 1766: iii)

The same language policy of avoiding excessive and unnecessary technical expressions in favour of “the simplicity of science and nakedness of truth” occurs late in the century in Currie’s text (*Medical reports, on the effects of water*, 1797: viii).

## 5. Original compositions and translations

The texts in this subcategory are mostly original works in English, but some works are translations. The title page of *An essay on the virtue and efficient cause of magnetical cures* (1743) states that the work was originally written in Latin and was published in English “for the Good of the Public”. Additionally, Büchner’s *An easy and very practicable method to enable deaf persons to hear* (1770) is a translation from German; Büchner was a professor at the University of Halle in Germany. Many of the works originally written in English in METHODS were influential and circulated across Europe, e.g. Jenner’s work on inoculation (*An inquiry into the causes and effects of the variolæ vaccinae*, 1798) was translated into several languages, as the new practice of inoculation caused a great deal of interest and polemics.

## 6. Continuity versus new trends

The subcategory of METHODS contains a great deal of material and provides continuity by treating several old topics and employing discourse forms from the earlier periods, but at the same time it

introduces various novel themes, such as smallpox inoculation, electricity, and medical gasses. Continuity from EMENT is well attested especially during the first half of the century. References to the ancient authorities continue, yet the tone is different as their knowledge is cast in doubt and its insufficiency is pointed out, e.g. “I can’t indeed wonder that the Ancients did it, being in a manner Strangers to Anatomy, and knowing nothing of the Circulation of the Blood:...” (Catherwood, *A new method of curing the apoplexy*, 1715: 6). Urinoscopy was a trusted method in medieval and early modern medicine, and continues in Hicks’s *A compleat treatise of urines* (1703). The work builds on authorities but shows an awareness of the advances in science made in the previous century. Another chief therapeutic method in earlier times had been phlebotomy, and its popularity continues in the form of arteriotomy to cure diseases. Works on medicinal baths and waters are also present, but with new articulations. Further, astrology had become less central as a diagnostic method in professional medical writing towards the late seventeenth century (see Pahta & Ratia 2010: 80). Consequently, astrology, along with alchemy and the occult, is marginal in METHODS, and is present only in the work targeted at lay readers and ascribed to Boerhaave (*An essay on the virtue and efficient cause of magnetical cures*, 1743).

By the beginning of the eighteenth century, medical authors had already become more interested in experiments and Matter-of-Fact philosophy than inherited wisdom. Several new methods and themes emerge in the eighteenth century and increasing attention was paid to statistical information to support these novel methods, e.g. “...it is to be observ’d, that a single Instance or two of this Kind, out of a very great Number of Persons inoculated, ought not in Reason to overthrow the Practice” (Jurin, *An account of the success of inoculating the small pox in Great Britain*, 1724: 5). The texts hence evaluate cures by comparing the number of healed patients as opposed to ineffective treatments and also by acknowledging the benefits of treatment as opposed to spontaneous recovery (Beddoes, *Considerations on the medicinal use, and on the production of factitious airs*, 1795: 12). Further, in a military context curing fevers by waters is backed up by statistical data of a hundred and fifty-three cases, of which “ninety-four occurred in the hospital... twenty-seven in private practice, and thirty-two in the 30th regiment of foot, when quartered in Liverpool in the year 1792” (Currie, *Medical reports, on the effects of water*, 1797: 6–7). This work is one of the increasing body of texts about naval diseases and circumstances in other parts of the growing Empire, already paving the way to the nineteenth century.