Empiricism contra experiment, in early modern medical thought

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Abstract

Vitalism, from its early modern to its Enlightenment forms (from Glisson to Barthez), is notoriously opposed to intervention into the living sphere. Experiment, quantification, measurement are all ‘vivisectionist’, morally suspect and worse, they alter and warp the ‘life’ of the subject. They are good for studying corpses, not living individuals. This much is well known, and it has disqualified vitalist medicine from having a place in standard histories of medicine, until recent, post-Foucauldian maneuvers have sought to change the situation (but for unrelated, contextualist reasons). What is more surprising is that if we consider the emergence of medical ‘theory’ as a whole, from Harvey through to Locke and Sydenham, is the presence of a sustained anti-experimentalist line of argument, and this from the ‘empiricist’ (not Cartesian or Boerhaavian rationalist) side. It would seem then that ‘empiricks’, medical empiricists and other protagonists of an ‘embodied empiricism’ are not Boylean experimentalists who seek to map out Nature in its transparency, but deliberately archaic, Hippocratic observers of living bodies.

It is known that empiricism is essentially a medical invention, dating back to the original ‘Empirics’ in the third century BC, with Serapion, a disciple of Herophilus of Alexandria (although ‘empiricist’ tendencies can be made out as far back as Hippocrates’ treatise On Ancient Medicine).1 We are familiar with the distinction between Empiricists, Methodists and Dogmatists from Galen’s accounts in treatises such as On Medical Experience and On Medical Sects2 (the key trait of the empirics is their emphasis on description rather than definition and the compilation of what might be called tables of induction: collections of instances where one thing (say an illness) is seen to follow from another, which then constitutes an “experience” [empeiria].) Indeed, if we fast forward to ‘modernity’, we find Mandeville, in his book on hysterick and hypochondriac diseases, quoting the basic empiricist credo (nibil est in

2 Galen’s relevant treatises are available in Walter & Frede (1985).
In the 18th c., with Diderot and D’Alembert’s *Encyclopédie*, the article “Empirisme” is much shorter than the article “Empirique,” which is entirely devoted to medicine. In what follows I would like to (briefly) consider this uniquely medical or embodied nature of empiricism, in order to stress how it differs from a more general or generic picture of scientific practice (experiment), including the common view of empiricism as stemming from the new Royal Society culture of experiment. In a paper presented to AAHPSSS last year I discussed the figure of Locke as contradicting the standard picture of empiricism (in this case, Locke as the “underlabourer” of Newton, Boyle, Huygens and Sydenham) due to the uniquely moral, theological and political motivations of his doctrine.

The specifically medical dimension I want to focus on today, if combined with the earlier point about Locke, could lead us to significantly revise our picture of what empiricism was in the early modern period (which is part of what some of us in Sydney are working on under the heading ‘*Embodied Empiricism*’). A good deal of robust revisionist work has changed our picture of ‘British empiricism’ in the past 10-20 years. Most relevant here is the idea that the thinkers we call empiricists (a) were less empirically minded than their 16th and 17th-century forebears, and (b) were in fact critical of empiricism, at least in the case of Hume.

I suggest that there might at the very least be different kinds of empiricism operative in English thought in this period, such as – for the sake of discussion – the following:

— a ‘Royal Society’, experimentalist empiricism (Bacon, Boyle...), which may be the context in which an actual ‘philosophy of experiment’ emerges (as in Boyle’s “There is a big difference betwixt the being able to make Experiments, and the being able to give a Philosophical Account of them” or Bacon’s “Founding a real model of the world... cannot be done without dissecting and anatomizing the world”);

— a medically motivated, ‘embodied’ empiricism (Harvey [see the analyses by Alan Salter], Gassendi, Sydenham; La Mettrie; vitalism)

— a moral/practical empiricism (Locke and Hume).

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4 A very different, more ‘Baconian-Boylean’ point of view is found in the article “Expérimental” by D’Alembert (*Enc.* VI [1756], p. 298).
5 Contrast the standard view of empiricism as tied to the Royal Society’s experimental culture and its origins in Bacon and the Oxford Philosophical Club, e.g. in Kaplan (1993), p. 44. Analyses which contextualize this culture of experiment as one of ‘trust’ and ‘civility’ (Shapin *et al.*) do not alter the classic view, for our purposes.
8 Boyle (1661/1999), p. 221.
That Locke worked closely with Sydenham, Richard Lower, and to some extent Thomas Willis, does not however render his empiricism a medical one. Locke’s Essay contains almost not a single medical example, and never makes a ‘realist’ ontological claim involving bodily states and their truth-value.

Here, focusing on the medical side of empiricism, I will claim that this trend culminates in the figure of vitalism, which philosophers of science are accustomed to view as the stupid person’s view, the belief in extra-causal vital forces and the like, but which was in fact the most sophisticated and diverse medical ‘model’ available in the Enlightenment (especially if we define vitalism so that it encompasses figures like Haller in addition to Bordeu, Barthez, Ménuret, Fouquet, etc., while conversely not applying the term ‘vitalism’ retroactively to a series of incompatible views including chinematry and animism). A structurally similar claim was made a generation ago by Georges Canguilhem, in his study of the origins of the notion of reflex action; Canguilhem wanted to show that the true founder of neurophysiology was not the (mechanist) Descartes but the (vitalist) Thomas Willis.10

In this specifically medical empiricism, the stress is on observation rather than on experiment, on bodily states rather than on de-personalized, quantitative measures. This explains the otherwise puzzling presence of polemics against anatomy, quantitative methods, and instruments such as the microscope (similarly to Harvey). Experiment and instruments go better with mechanism. The microscope is much friendlier to the iatromechanist, or the ‘expanded mechanists’ like Malebranche or Leibniz, than to the type of empiricist who promotes unaided sense-perception.

Locke and Sydenham similarly reject the value of microscopy:

All that Anatomie can do is only to shew us the gross and sensible parts of the body, or the vapid dead juices all which, after the most diligent search, will be noe more able to direct a physician how to cure a disease than how to make a man. … How to regulate his dose, to mix his simples and to prescribe all in a due method? All this only from history and the advantage of a diligent observation of these diseases, of there beginning progress and ways of cure … sugar in some stomachs turns to acidity and milk the most universal and innocent food in the world, is to some men as bad as poison. The anatomist will hardly be enabled to tell us, therefore, what changes any particular medicine either makes or receives in the body …11

and especially,

11 Sydenham/Locke, *Anatomia* (1668) (the text is attributed both to Sydenham and to Locke); Locke’s ‘version’ is Locke ms., National Archives PRO 30/24/72/2 ff. 36v–37r., cit. Walmsley (2008), p. 70. It is also transcribed in Dewhurst (1966), pp. 85-93. On this resistance to the microscope see also Wolfe (1961).
it is . . . beyond controversy that nature perform all her operations in the body by parts so minute and insensible that I think noe body will ever hope or pretend even by the assistance of glasses or any other invention to come to a sight of them.\textsuperscript{12}

Again, “In the study of generation, the microscope — although mistrusted by the empiricists who rejected instrument-assisted sense perception — was very much welcomed by the mechanical philosopher.”\textsuperscript{13} From the mechanist standpoint the microscope is viewed as extending the sensory powers of the subject. In contrast, the empiricist has a kind of first-person view of experience (\textit{not, however}, reducing it to uniquely mental states as an animist would: for there is a difference between criticizing iatromechanism for its inability to capture features of living bodies, and criticizing it for missing the existence of an additional, spiritual substance\textsuperscript{14}). A first-person state of experience in which “the investigator . . . [acquires] unmediated ocular evidence [\textit{or tactile evidence, etc.-Cf}] of the way things stood in the body rather than testing hypotheses by means of artificial experiment.”\textsuperscript{15} Indeed, for Sydenham and Locke, “observation without instruments is a moral imperative.”\textsuperscript{16}

We would of course want to ask here: what \textit{kind} of knowledge is this embodied, first-person knowledge characteristic of the medical empiricist? Is it scientific knowledge? Note in addition that by distinguishing the embodied, medical focus of this kind of empiricism from a more quantitative, experimentalist, ‘Royal Society’ kind of empiricism, I am not reiterating the older, fairly a-historical claim (found e.g. in Charles Gillispie, but also Koyré or A.C. Crombie\textsuperscript{17}) that medicine in the early modern period was more of an ‘art’ than a ‘science’. \textit{Personal} knowledge does not necessarily have to be ‘art’ rather than ‘science’.\textsuperscript{18} Witness Sydenham’s efforts to not be identified with the ‘empiricks’ even though he also attacks ‘learned medicine’.

If medical empiricism in its early modern form is to be distinguished from mechanistic medicine, and from a more ‘rationalist’ belief in the measurable transparency of Nature, it starts to resemble a slightly different creature, namely, medical vitalism. The importance given to nosology – the history and taxonomy of diseases rather than the ‘essentialist’ concern with their internal causes, whether mechanistic or Helmontian – and the

\textsuperscript{12} Sydenham/Locke, \textit{Anatomia, op. cit.}, in Dewhurst (1966), p. 85 (also quoted in Dewhurst [1958], pp. 7-8).
\textsuperscript{13} Van Speybroeck, De Waele & Van De Vijver (2002), p. 18.
\textsuperscript{14} On how some vitalistic critiques of mechanism are better seen as ‘complexifications’ of mechanism see Wolfe & Terada (2008).
\textsuperscript{15} Dear (2006), p. 112.
\textsuperscript{17} Crombie declares rather bluntly that “the effect aimed at by medicine is health. It shares this end rather with religion than with science” (quoted in Cook [1990], p. 403).
\textsuperscript{18} Cf. Alan Salter’s remark that Harvey put the phrase ‘Per me’ on the frontispiece of his Lumleian Lectures (an academic exercise if there was one).
insistence on the legitimacy of (archaic) Hippocrates and Hippocratic medicine over and against ‘modern’ (e.g. mechanical) medicine, are elements common to the Locke/Sydenham view and to medical vitalism.\(^{19}\)

Montpellier vitalism (that is, the doctrine or cluster of positions associated with the Medical Faculty at Montpellier, from the early eighteenth century to the early nineteenth century) consistently praises observation and disparages experiment, whether the latter consists of anatomical and pathological studies of corpses, or worse, of vivisection of live animals. It also tends to include favourable references to empiricism (Condillac, but also Locke, and in the case of Barthez – who admittedly mixes philosophical references in a confusing way -, Hume). Henri Fouquet speaks of Haller’s theory as dependent on a “horrific experimental set-up [appareil d’expériences],” ostensibly “guided by the desire to help humankind, but leaving out no painful instrument, no source of torment for . . . an infinite number of animals.”\(^{20}\) Jean-Joseph Ménuret de Chambaud (Ménuret) restricts his criticism to epistemology when he describes experimental phenomena in his programmatic article “Observation” as having been arbitrarily “decomposed and combined,” giving rise to conditions “far different from those present in nature” (Enc. XI, 313b). When the physiologist dissolves blood freshly drawn from an animal, using other liquids, the knowledge he derives regarding the resulting mixture “is no longer the fruit of pure observation; . . . knowledge acquired by this means is quite mediocre and imperfect” (ibid., 314a). Louis de La Caze insists that ‘observation’ means “what can be observed on a healthy or sick body,” whereas ‘experiment’ means “whatever can be observed of a dead body,”\(^{21}\) and also targets Boerhaave’s “useless experimentation” (ibid., pp. 47-48, 66).

An additional feature in vitalist argumentation which is not present in the Sydenham-Locke critique of anatomy and experiment, is its usage of Newtonian analogies (see Hall [1968]), which arguably complicates the distinction I suggested above between medical empiricism and Boyle-Newton, Royal Society empiricism. But in fact, contrary to the initial impression that empiricism should be a kind of ‘epiphenomenalism’ which disregards the essences of things, whereas vitalism would be an ontology, a theory of substance, etc.,\(^{22}\) the Newtonian motif in vitalism renders it equally ‘agnostic’ as to the ontological status of its

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\(^{19}\) On nosology and Montpellier vitalism see Martin (1990).

\(^{20}\) Fouquet, “Sensibilité,” Encyclopédie XV, 50b (hereafter Enc. followed by volume and page number).

\(^{21}\) La Caze (1755), p. 9.

\(^{22}\) Thanks to John Sutton for pointing out this issue.
entities. (Barthez: “I am as indifferent as could be regarding Ontology considered as the science of entities.”")

In sum: medical empiricism is different from the proof-and-validation experimentalism of Royal Society empiricism; it has a vitalistic flavour as distinct from mechanical medicine. This is not as shocking as might seem from a post 19th-century standpoint (that is, after the appearance of ‘neo-vitalism’), as 18th century vitalism was a heavily pragmatic, heuristic sort of enterprise which, contrary to popular belief, has no concern with ‘vital forces’ or other extra-causal agents but rather with extending structural accounts of the organizational features of living bodies.

Now, in itself, the existence of a medicine of observation and nosology in contrast (indeed, in opposition) to a medicine of experiment and anatomy, is non-controversial – trivial, as it were – but its articulation with, or as, a kind of empiricism is less trivial. Should all of this revise our picture of the place of ‘Life’ within the Scientific Revolution (hitherto ignored or unacknowledged)? It remains to be seen.


24 On this question see Cook (1990) and Duchesneau (1996). I extend the analysis to materialism, arguing for its specifically ‘biologicist’ character in the 18th century, in Wolfe (forthcoming).

25 Without wanting to speak as a philosopher of medicine, I suggest the possibility that this tension between an ‘experimentalist’ and an ‘empiricist’ medicine carries on down to science-based medicine versus patient-based medicine. The funny part is that the latter, seeking for theoretical support, tends to look towards Continental thought, the Other, subjectivity, etc., when it fact it is an outgrowth of empiricism!
References


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