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On the constitution and status of ‘evidence’ in the health sciences

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Abstract  Drawing on the philosophy of Michel Foucault and Gilles Deleuze, this paper interrogates the constitution of ‘evidence’ that defines the evidence-based movement in the health sciences. What are the current social and political conditions under which scientific knowledge appears to be ‘true’? Foucault describes these conditions as state ‘science’, a regime that privileges economic modes of governance and efficiency. Today, the Cochrane taxonomy and research database is increasingly endorsed by government and public health policy makers. Although this ‘evidence-based’ paradigm ostensibly promotes the noble ideal of ‘true knowledge’ free from political bias, in reality, this apparent neutrality is dangerous because it masks the methods by which power silently operates to inscribe rigid norms and to ensure political dominance. Through the practice of critique, this paper begins to expose and to politicise the workings of this power, ultimately suggesting that scholars are in a privileged position to oppose such regimes and foremost have the duty to politicise what hides behind the distortion and misrepresentation of ‘evidence’.

Key words  Cochrane; criticism; Deleuze; ethics; evidence-based nursing; evidence-based practice; Foucault
Introduction
What constitutes ‘evidence’ in the health sciences? Without too much hesitation, we might say that scientific evidence is worthwhile if it can be repeated, independently verified and measured according to standards upon which we can all agree. We might call this the ‘common sense’ view and commonsensically believe that these conditions hold as true not just in the sciences but also in our daily dealings in the world. We might even say that nothing could be more straightforward, that evidence in this context is obvious or ‘self-evident’ and that in the end, ‘seeing is believing’. In this paper, we suggest that this cheerful proverb stands as a kind of emblem for the dangerously naïve commonsense view on truth that has spread throughout our culture. We argue that this view betrays an almost unshakeable faith in the human capacity for unbiased or objective observation and analysis. Ultimately, this means that science becomes supplanted by ideology, and scientific inquiry becomes a ‘methodological fundamentalism’ (House, 2006).

This paper discusses the constitution and status of ‘evidence’ in light of the almost evangelical rise of evidence-based health sciences (EBHS), including nursing. One salient example is the Cochrane Library, which provides EBHS acolytes with a database of ‘systematic reviews’ that has been faithfully constructed according to the evidence-based movement (EBM) directives. Thus, within the Cochrane Library’s hierarchy of allowable ‘evidence’, the randomised controlled trial (RCT) is taken as the ‘gold standard’, and proponents will scoff at any criticism because the RCT can be repeated, independently verified and measured according to standards upon which we can all (presumably) agree. It is not rocket science, or so they will say. But here with the seemingly innocent exaltation of the RCT, we find an explicitly hierarchical ranking that denigrates the evidentiary value of clinical experience; and similarly, qualitative research based, among other things, on participants’ narratives is ‘systematically’ ranked lower in value as ‘evidence’.

Thus, the most faithful proponents of EBHS must adopt a position in which “seeing is believing”—where evidence is presumed to be visual, immediate and incontestable. It is as if the evidence itself spoke the truth, and EBHS finally realised the dream of a pure science, a science free from the inherent messiness of human language, of human interpretation, of human values or, indeed, of anything recognisably human because the body that EBHS treats is the ‘average body’ generated by the RCT, without any experimental body. Nevertheless, within the culture of the health sciences, EBHS now circulates as a kind of fundamental truth, and it can do so because EBHS has come to control the terms by which evidence appears. The EBM constitutes a vast matrix of influence from funding bodies and academic institutions to nursing best-practice guidelines (BPGs) and multiple-related postulates that inform day-to-day heath care practices. In other words, for EBHS, ‘seeing is believing’ because EBHS carefully limits what can be seen in the first place. EBHS limits not only what can appear within our visual field but also how it will appear and how that evidence will be framed. EBHS appeals to a culture that is taught to embrace simple directives and to be suspicious of intellectual critique.

Seeing is not always believing
Those of us who work in philosophy and critical theory have long argued that ‘seeing’ and ‘believing’ make strange bedfellows. Many of us argue that to see is, in some sense, to interpret what is seen. These interpretations are not always conscious; they
operate behind the scenes, determine how something will appear to us as either (i) true or false or (ii) good or evil. To take one example from popular culture, we might think of the 1992 trial of Rodney King and how the videotaped beating of this man was used to help acquit the police officers who beat him. Remarkably, the videotape was used as ‘visual evidence’ and was freeze-framed and contextualised in such a way as to convince 12 jurors that Rodney King was noncompliant as he was being beaten and that he continued to pose a physical threat to the police officers who were therefore justified in their continued assault on him. Much of the trial hinged on a video excerpt where King was lying on the ground with his arm raised over his head. For the jury to ‘see’ King’s raised arm as a physical threat in this moment, rather than as a man trying to protect himself from continued blows, suggests that seeing is never neutral. In a published discussion of the trial, Butler refers to ‘a racially saturated field of visibility’, a way of seeing, we might say, that determines in advance how the black male body will be seen, a way of seeing that structures ‘what can and cannot appear within the horizon of white perception’ (1993, pp.15–16).

Our point in referring to what many saw as a manifest injustice is to call attention to our ways of seeing and the often hidden politics of the evidence to hand. In the King case, many of us would draw a very different conclusion from the visual ‘evidence’, even though it is exactly the same piece of evidence: it can be repeatedly screened, its accuracy can be independently verified and it can be measured according to standards upon which we can all (presumably) agree. Although the evidence seems to present a truth that is pure and simple, as Oscar Wilde once quipped, the truth is rarely pure and never simple. The evidence cannot simply speak for itself because the meaning of that evidence is of another order altogether. Thus, we must worry about the ways in which evidence is manipulated and contextualised under the aegis of efficiency, in the name of political expediency or in the name of scientific progress, and sometimes all three at once, as in the famous case of the Tuskegee Syphilis Study, to offer one tragic example. Here again, ‘a racially saturated field of visibility’ helped to justify testing on human subjects because these African-American subjects were seen as not quite human in the first place.

In Foucault’s terminology, this way-of-seeing is informed by what he calls an épistème (a word that comes from the Greek for ‘science’ or ‘knowledge’). An épistème is the accepted and dominant manner of gaining and organising knowledge in a given historical period. An épistème is a ‘strategic apparatus’ (Foucault, 1980, p.197) that informs our ways of seeing, our Weltanschauung or ‘world view’; it operates covertly and underwrites our understanding of the world (Holmes, et al., 2008). In other words, an épistème is the implicit ground of our knowledge, the condition of possibility for something to appear to us as true or false, good or evil. Dominating épistèmes or world views are expressed in part through institutions, such as healthcare settings, and through specific scientific disciplines, such as nursing, psychiatry or endocrinology. It is difficult, if not impossible, to see the épistème that frames the way one sees, so we must come to understand épistèmes by virtue of their effects, that which the épistème mobilises or enables. This critical enterprise will be difficult because the discursive effects of an épistème are intricate and far-reaching; indeed, these épistèmes are so powerful precisely because their mechanisms mask the ways they operate. Thus, instituted or épistemic ways-of-seeing drive specific actions, allow for knowledge development in certain domains, and foster the development and implementation of regulatory mechanisms, which, in turn, are supported by myriad interconnected institutions and scientific disciplines (the perceived scientficity or truth of which is often measured by the extent of their épistemic compliance).
We contend that the EBM and its postulates have come to form the dominant *episteme* in the health sciences. Moreover, this *episteme* has deleterious political effects in part because it is implemented ideologically and invisibly; its postulates remain unexamined.

**The value of critique**

Recently, we have joined a growing number of scholars who have voiced criticism over the EBM (French, 2002; Freshwater and Rolfe, 2004; Goldenberg, 2006; Staller, 2006; Traynor, 2002; Winch, et al., 2002; Walker, 2003). Our critical perspective develops some of the five shortcomings of the EBM succinctly described by Cohen, et al. (2004), namely, that EBHS [1] relies too heavily on empiricism, [2] relies on too narrow a definition of evidence, [3] ironically, lacks any evidence of its own efficacy, [4] is of limited use for individual patients and [5] threatens the autonomy of the clinician or patient relationship. In addition, however, our work has attempted to politicise the ways of seeing that have become common in the health sciences as a result of the EBM agenda (Holmes, et al., 2008; Holmes, et al., 2006a, Holmes, et al., 2006b; Murray, et al., 2007). In other words, we have sought to examine, to bring to light, the unexamined postulates that underwrite the EBM. From this critical perspective regarding what is now the dominant *episteme*, we claimed that the EBM was politically dangerous (Holmes, et al., 2006a). Relying on the French philosophers Deleuze and Guattari (1987), we argued polemically that the EBM is akin to a totalitarian political structure and, consequently, that its way-of-seeing is informed by a politically dangerous ideology. In a nutshell, we noted that the EBM wholeheartedly adopts corporate models of efficiency and accountability, right down to a corporate lexicon; EBM relies reductively on quantitative evidence in which RCTs are fetishised; EBM denigrates other forms of knowledge, including clinician experience and patient testimony; finally, EBM evacuates the social and ethical responsibilities that ought to distinguish health care professions, such as nursing.

To be sure, the EBM has generated its own industry, from the Cochrane Collaboration through to specialised journals, BPGs, governmental research grants and policy making. In light of this, we have argued that the EBM is both self-serving and dangerously exclusionary in its epistemological methodologies. This is the danger when the health sciences become governed by technicians and bureaucrats and when critical thinkers are driven to the margins or altogether expelled. We have joined those who have characterised the EBM as a ‘methodological fundamentalism’ (House, 2003, 2006), arguing that this charge is warranted; ‘evidence based’ is nothing more than faith based when evidence refers only to hegemonic and institutional ways-of-seeing. Worse still, we have shown how the EBM is frequently used to justify state demands to streamline healthcare because the EBM provides ready-made and easy-to-implement numerical goals and targets. To speak out against this powerful aggregate of coordinated forces from a position of relative powerlessness was bound to be met with extreme resistance.

Unsurprisingly, then, proponents of the EBM have shot back at us, from blogs to journal articles, accusing us of relying on jargon-filled postmodern theories that stand in the way of the EBM’s number one priority, to ‘better man’s lot’, as one commentator put it (Jefferson, 2006, p.393). Indeed, we are charged with a kind of recklessness, a blind and wanton vendetta against the EBM practitioners at the expense of patient health and well-being. At first blush, this is a clever rhetorical strategy. We ivory-tower ‘theorists’ are easily pitted against the ‘practitioners’ when the
practitioners are celebrated as nobly serving humanity down in the trenches; thus, according to such a binary logic, we are demonised as theoreticians who ignorantly obstruct those pious practitioners who only want to do their job! Despite EBM’s evangelical rhetoric of salvation, this unrepentant moralising soon betrays its superficiality. In response, we have argued (Murray, et al., 2007) that theory is a kind of practice and that our critical intervention demands of practitioners a certain intellectual integrity and honesty. In fact, this is what should count as ‘good science’ and ‘persuasive evidence’, quite distinct from the ‘state science’ (Foucault, 1997, p.37) that the EBM has become. We demand that they think not only about the means by which better outcomes (an EBM mandate) are justified but also about the wider social and political effects of these means and ends together.

**Theory and practice**

In a published conversation from 1972, Foucault and Deleuze ask how theory and practice are related, and in particular, what role the intellectual ought to play in theoretico-practical matters. Deleuze makes the following remark: ‘a theory is always local and related to a limited field, and it is applied in another sphere, more or less distant from it’ (Foucault, 1977, p.205). Here, theory is particular, not universal. Deleuze suggests that the effective use of theory entails what we might call a particular misapplication of sorts. Theory must be put into practice in a sphere beyond the limits of its original scene, beyond its epistemological horizon. Often, this will entail a risk because it transgresses or otherwise challenges the dominant episteme and the ideological powers with which it is allied. Foucault responds to Deleuze: ‘theory does not express, translate, or serve to apply practice: it is practice. But it is local and regional…, and not totalizing’ (Foucault, 1977, p.208).

This, then, has been our intention: we wagered that a theoretical discussion on truth, power and political fascism might offer a valuable, and practical, lens through which to critique the EBM in the health sciences. Indeed, we wagered that our use of theory would be a productive misapplication of sorts, paying off by providing some insight into the hidden politics of the health sciences that, we have argued, are held hostage to rigid evidence-based taxonomies and hierarchies like those promoted by the Cochrane Collaboration. We firmly believe that it is crucial to have cross-pollination between academic disciplines, as between theory and practice. Too often, we become mired in our own fields of research and so thoroughly indoctrinated by our working culture and best practices that we lose the capacity to honestly critique the dominant methodologies of our own disciplines. Sometimes, a relative outsider is best situated to offer new terms of understanding or a new methodological approach. This is because the outsider is not limited by the theoretico-practical terms that govern the insider’s regime of knowledge; the outsider brings a different lexicon, novel explanatory terms and a fresh modus operandi. The outsider puts her theory into practice. As Deleuze famously remarks, here theory ‘is exactly like a box of tools’ (Foucault, 1977, p.208); the outsider (whom he also calls the ‘nomad’) sets to work to build something new, trespassing upon our familiar terrain and transgressing our traditional topologies (Murray, et al., 2007).

In practical terms, this means that we must bring the language of political and critical theory to bear on the EBM to demonstrate the ways in which it constitutes a political discourse. We must show how, without critical–theoretical intervention, the EBM reduces health care to a routinised, quantifiable practice driven by utility, best practices and reductive performance indicators. The result, as Denzin, et al. (2006,
p.772) have suggested, ‘turns subjects into numbers’ and ‘turns social inquiry into the handmaiden of a technocratic, globalizing managerialism’. This is certainly not to banish the use of RCTs, but it means being critical of the ‘average patient’ that they construct as the paradigmatic object of their clinical gaze. There is no such thing as a ‘statistically average patient’, and the vast majority of patients cannot accurately be described as white, male, Western or heterosexual, which are increasingly troubled identity categories. Thus, we suggested that ways-of-seeing were epistemic, that is, largely a product of shifting social and historical values. As evidence, we cited the historical pathologisation of homosexuality along with the hysterisation of the female body, both of which are now widely recognised as bad medicine, but designated as Truth in previous years. One way to combat such methodological fundamentalism is what we might call methodological pluralism, where a plurality of discourses and knowledge is encouraged. In this way, we hope to resist the Orwellian ‘Newspeak’ that reigns in the health sciences—buzzwords like ‘best-practice champions’, ‘gold standard’ and ‘spotlight organisations’, which work to ensure a highly normative, uniform and rigidly circumscribed way of seeing, speaking and thinking.

In short, we must find ways to combat the procrustean policies that have hijacked many modes of scientific inquiry and have led instead to a tangled web of ideological apparatuses, including Big Pharma; innumerable government lobbies; professional healthcare associations, such as the Registered Nurses’ Association of Ontario (Canada) and its compulsive endorsement of ‘best-practice guidelines’; academia and its research sponsors; the convergence of research and business with multiple stakeholders, both public and private; paradigms rewarding the bioentrepreneurship of biotech companies; service industries from the human genome sciences to multinational agribusiness complexes; corporate models from the ground up, including accountability practices and the obsession with quantification; the legal-juridical complex; and the insurance industry (Murray, et al., 2007). This list is by no means exhaustive, but it indicates that the challenges are legion. Nothing less than a multitude of micro-resistances is called for in each of these domains. In the face of a strategic fundamentalism that closes off debate, we must be mindful to resist in such a way that we open up critical debate and question those mechanisms that work to seduce us into complacency. In short, the health care sciences ought to work to foster an ethic of patient care that resists technocracy, that is, an ethic that will be respectful of and responsible for patient diversity for the good life (Murray, 2007).

**Concluding remarks: the power of evidence**

We began by asking a question that was deceptive in its simplicity: ‘What constitutes evidence in the health sciences?’ There is no easy answer because of the verb ‘to constitute’. We must immediately ask: Who or what constitutes the truth of evidence? What force or agency is behind this constitution? and to what effect? As we have argued, the difficulty is that the EBM has no locatable source, its power is implicit in an episteme that frames the ‘truth’ in such a way that its constitution—its very framing—is obscured. This situation is political through and through because there are those who manipulate and benefit from these coordinates while passing off this domination as natural, common sense or good science. In this regard, the implicit hierarchy of the EBM is not unlike those power hierarchies that characterise totalitarianism: there is no locatable source, and the individual actor-agent evades his social, political and ethical responsibilities with the claim that he was ‘just following orders’.
It is the task of a critical philosophy to evaluate evidence, which is to say, to determine what piece of evidence ought to be valued over another in such-and-such a case and why. On the surface, the Cochrane taxonomy does just this, but its approach is one-size-fits-all; it is decidedly anti-philosophical because practitioners are discouraged from thinking when they are obedient to a taxonomy of evidence. Thus, we have argued for an ethic of critique in this regard. By critique, it should be obvious that we mean something which is irreducible to ‘fault-finding’ or ‘judgement’ (Williams, 1976, pp. 75–76). Rather, critique is a reflection on the underlying conditions of possibility for knowledge and truth, that is, critique brings to light the episteme by weighing the effects of its postulates. To say that ‘seeing is believing’ offers a compelling instance in this regard; this happy proverb reflects an uncritical attitude, a way-of-seeing, or a world view in which certain things appear, naturally and innocently, to be self-evidently either (i) true or false or (ii) good or evil. Critical inquiry is therefore more fundamental than a scientific inquiry, which takes the evidence of perception for granted and fails to ask more foundational questions about the perception of evidence, that is, about what allows us to perceive something as evidence in the first place. Here, we are drawing on Foucault, who characterises critique as follows:

‘not attempting to find out what is true or false, founded or unfounded, real or illusory, scientific or ideological, legitimate or abusive. What we are trying to find out is what are the links, what are the connections that can be identified between mechanisms of coercion and elements of knowledge, what is the interplay of relay and support developed between them, such that a given element of knowledge takes on the effects of power in a given system where it is allocated to a true, probable, uncertain or false element, such that a procedure of coercion acquires the very form and justifications of a rational, calculated, technically efficient element…’ (Foucault, 1997, p. 50)

Critique is therefore a set of relays between theory and practice. According to Foucault, the point of critique is not to render a judgement, but rather, to lay bare those conditions under which judgement proceeds in the first place. These conditions are coercive; they are political. For this reason, power is aligned with knowledge, and we are justified in writing ‘power/knowledge’ as Foucault does when he emphasises that power and knowledge form a unitary structure. There is therefore no ‘pure science’ if this implies a knowledge that would be uncorrupted by power.

Whether we call ourselves practitioners or theoreticians, we cannot deny that we are caught up in a web of power that informs how we see the world. We must be vigilant when we act and speak, acutely aware of the multiple contingencies that inform our authority, from academia to governmental agencies to multinational pharmaceutical corporations, etc. In Foucault’s words, this entails ‘truly and profoundly questioning this relationship between rationalization and power’ (Foucault, 1997, p. 39). In Foucault’s words, we must dare to ask the question ‘how does rationalization lead to the furor of power?’ (Foucault, 1997, p. 42). We must acknowledge the coercive dimensions, the madness or furor, of ‘scientific rationality’, ‘the effects of constraint linked to its institutionalization and the constitution of [scientific] models’ (Foucault, 1997, p. 42). The role of criticism is not merely historical; it is very much urgent in the present. Not only must we ask how things became what they are, but also we must look for breaking points to prise open this discourse in a spirit of resistance and to work to imagine how things might be other than what they have become, no matter how naturally they present themselves, no matter how forcibly the evidence ‘speaks’ to us. By asking what can be seen and how, we are on our way
toward a politics of evidence that will be commensurate with the social, political and ethical responsibilities that truly ought to inform the critical practices of today’s health care professionals.

Key Points

- This paper discusses the constitution and status of evidence in light of the almost evangelical rise of the evidence-based movement (EBM) in the health sciences, including nursing.
- It offers a critique about the ways in which evidence is manipulated and contextualised, whether under the aegis of efficiency, in the name of political expediency or in the name of scientific progress, and sometimes all three at once; Danger is afoot when the health sciences become governed by technicians and bureaucrats when critical thinkers are driven to the margins or altogether expelled; Without critical-theoretical intervention, EBM reduces health care to a routinised, quantifiable practice driven by utility, best practices and reductive performance indicators.

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