

Evidence-based medicine: toward a new definition of 'rational' medicine

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ABSTRACT Evidence-based medicine (EBM) promises to make the practice of medicine more fully 'rational', thereby increasing medicine's reliability and improving patient health outcomes. However, intractable ethical and epistemic problems with applying a model of rationality that privileges quantifiable 'evidence' in medical practice – evidence often at odds with nonquantifiable patient experiences, values and preferences – have prompted some within the medical community to condemn EBM. This article analyzes textual evidence from the medical literature as the medical community's effort to rhetorically renegotiate a new model of rationality, one which both preserves rationality's promise to protect medical decision making from the dogmatic, subjective and arbitrary and permits nonquantifiable patient experiences, values and preferences to play a legitimate role in rational diagnostic and therapeutic decision making.

KEYWORDS *Brown; evidence-based medicine; Habermas; patient welfare; rationality*

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To anyone familiar with the medical literature, the opposition is by now a commonplace: **the 'scientific' practice of medicine is both epistemically and ethically incompatible with medical decision making based on human experiences, preferences and values.** To practice medicine based on scientific evidence is to treat patients as 'mass-produced objects on a factory production line' (Evans, 1995: 462); to fail to do so is 'to return to the physician's intuition, to anecdotes, or to both as the basis of medical opinion' (Hellman and Hellman, 1991: 1588). Greenhalgh has called this opposition the 'dissonance between the "science" of objective

measurement and the “art” of clinical proficiency and judgement’ (Greenhalgh, 1999: 323).

Evidence-based medicine (EBM) focuses on integrating quantified ‘scientific’ evidence into the decision-making process. The appeal of EBM derives from the relationships that are generally believed to hold among this type of ‘evidence’ and truth, validity and reliability. Because scientific practice is the paradigm case of ‘rational’ practice, EBM, which seeks to base its practices on scientific evidence, has been advertised as a more ‘rational’ way to practice medicine. Ideas about the putative relationships among evidence, truth, validity and reliability, which Wynne has characterized as the ‘founding culture of rationality’ of western scientific programs (Wynne, 1995: 361) have established the ‘institutionalized cultures and boundaries of science . . . as a universal standard of judgement’ (Wynne, 1995: 384); EBM is medicine’s attempt to better conform to this scientific standard.

The idea of ‘rational’ action exists because people find it useful to distinguish actions based on reason from actions based on emotions, impulses or random choice – ‘rationality’, then, is what protects our actions from arbitrariness, subjectivity, bias or error. The central idea of ‘rationality’ is that:

we have reasons for our rational beliefs and can provide those reasons on request . . . If we are to be rational, we must believe on the basis of relevant evidence, and be prepared to alter our beliefs if the weight of evidence changes. We also expect rational beliefs to be, on balance, more reliable than nonrational or irrational beliefs exactly because our rational beliefs are based on appropriate evidence. (Brown, 1990: 183)

Rationality appeals because we believe that ‘rational procedures provide reliable results’ (Brown, 1990: 35). EBM, because it focuses on integrating quantified scientific evidence into the decision-making process, thus promises to be a more reliable practice with better health outcomes for patients.

Yet the reception of EBM in the western medical community has been anything but unequivocally approving. The literature contains articles that warn *against* the ‘rational’ in medicine, on the grounds that it amounts to the ill-advised and unethical abandonment of the ‘human’ element in medicine (Hellman and Hellman, 1991; Evans, 1995). That the promotion of a ‘rational’ basis for medicine should arouse such anxiety suggests a collective sense that there is something essential to the best practice of medicine that is at odds with the notions of ‘rationality’ that hold sway in the medical community and to some extent in society at large. **In this article, we shall argue that articles in the medical literature that question the advisability of EBM are textual evidence of a collective need to better integrate scientific quantitative data on the one hand, and the art of human judgment on the other, into a common definition of ‘rational’ medical practice.**

The classical model of rationality

The rhetoric that prevails in the medical literature suggests that what Brown has dubbed the 'classical' model of rationality still dominates western medical thinking (Brown, 1990). According to Brown, the classical model of rationality is founded on three fundamental presuppositions:

1. that results of rationality should and will be *universal* – any rational person, if s/he begins with the same information, will arrive at the same conclusions:

On this model, a belief or decision is rational if it conforms to a set of criteria, and if the same criteria are applicable in every context, then rational individuals need not debate over which criteria should be applied. If alternative criteria are admitted, we may find ourselves having to choose between them, and we will need some way to make *this* choice on a rational basis. (Brown, 1990: 13, emphasis in original);

2. that results of rationality are *necessary* – a rationally acceptable conclusion is not the result of a mass coincidence, but rather the necessary outcome of deliberate reasoning; and
3. that therefore rational decision making must be *determined by rules* – rationality results from the application of repeatable algorithms, which even if not made explicit during the process of rational decision making can be 'traced back' from successful decisions, and more importantly can be used in future decision making to repeat that success (Brown, 1990).

This last presupposition translates explicitly into the procedures that are endorsed by proponents of EBM: 'The philosophy underlying EBM suggests that a *formal set of rules* must complement medical training and common sense for clinicians to effectively interpret the results of clinical research' (Guyatt et al., 2000: 1291, emphasis added). As the Evidence-Based Medicine Working Group has claimed, '*systematic* attempts to record observations in a *reproducible* and *unbiased* fashion markedly increase the confidence one can have in knowledge about patient prognosis, the value of diagnostic tests, and the efficacy of treatment' (Evidence-Based Medicine Working Group, 1992: 2421, emphases added). The appeal of the classical model of rationality in medicine, operationalized in EBM, is clear: it promises a rule-governed procedure that, if followed faithfully, will necessarily result in improved health outcomes for all patients.

Awareness of the three presuppositions of the classical model of rationality allows us to more fruitfully analyse what we might mean by 'evidence', and the 'rationality' of decisions made on the basis of that evidence. It permits us, for instance, to identify the sources of tension apparent in recent articles written by proponents of EBM, most of whom seem well aware of the many problems inherent in applying population-based biostatistical evidence to the care of individual patients. In a recent article, EBM proponents Guyatt et al. argued for a 'broad definition of evidence',

suggesting that it include 'any empirical observation about the apparent relationship between events' (Guyatt et al., 2000: 1293). In theory, this definition of 'evidence' could include the empirical observations both physicians and patients make under the uncontrolled conditions of routine medical practice. However, although Guyatt and his colleagues regard all of these empirical observations as evidence, they do not regard them all as equally valid. Some are more prone to bias; others represent population measures that cannot be unproblematically (e.g. systematically) applied to individuals. Rather, they suggest that clinicians weigh various forms of information according to the following validity hierarchy (with the least-valid evidence appearing at the bottom and the most-valid at the top):

N of 1 randomized trial

Systematic reviews of randomized trials

Single randomized trial

Systematic review of observational studies addressing patient-important outcomes

Single observational study addressing patient-important outcomes

Physiologic studies

Unsystematic clinical observations. (Guyatt et al., 2000: 1293)

One feature of Guyatt et al.'s hierarchy that strikes us immediately is that this validity continuum is a function, at least in part, of the degree to and precision with which 'evidence' can be quantified – i.e. the salient phenomena can be *measured* and *compared*. Even their 'N of 1 randomized clinical trial' would have 'patients make quantitative ratings of their symptoms during each period [i.e. the periods when they receive the target and the control treatments]' (Guyatt et al., 2000: 1293). As Greenhalgh has observed, 'a finding or a result is more likely to be accepted as a fact if it is quantified (expressed in numbers) than if it is not' (Greenhalgh and Taylor, 1997: 1). Argumentation theorist Perelman, too, has noted the persuasive force of quantitation in science: 'in contemporary natural sciences, facts are increasingly subordinated to the possibility of measurement, in the broad sense of that term. The natural sciences display a resistance to any observation which cannot be fitted into a system of measurement' (Perelman and Olbrechts-Tyteca, 1969: 102).

Guyatt et al.'s hierarchy, with its privileging of quantitative evidence, thus conforms to the epistemic commitments of scientific reasoning, which relies overwhelmingly on quantifications to provide persuasive force. The promise of EBM is that basing decisions on objectively measured quantitative evidence will protect patients from what Passamani has dubbed 'our therapeutic passions' (Passamani, 1991: 1590), because quantitation enables a repeatable, rule-driven algorithm that will guarantee necessary and

universal outcomes: 'The strength of the quantitative approach lies in its reliability (repeatability) – that is, the same measurements should yield the same results time after time' (Greenhalgh and Taylor, 1997: 3[RJS2]). As Brown has noted:

Mathematics and logic provide a paradigm of rationality. Given a specific problem in long division, there is no room for judgement or opinion as to the correct solution; there is simply a correct answer, and anyone, anywhere, who follows the appropriate procedures correctly will arrive at this answer . . . The key idea is that there exists both a definite solution and a definite procedure for arriving at that solution, and all who follow that procedure must arrive at the same result. (Brown, 1990: 6)

Contrast this impulse toward rule-driven quantitation with the imprecise muddle of patient experiences, values and preferences expressed in their narratives – a type of 'evidence' that Guyatt et al. omit entirely from their list (although other EBM proponents, such as Greenhalgh, would include it). Recorded patient narratives suggest that the impulse toward quantitation is incompatible with how most patients experience their bodies and decide how to behave (Leder, 1990; Hunter, 1996a; Greenhalgh and Hurwitz, 1998, 1999; Greenhalgh, 1999; Little et al., 1999). As Wynne has noted, the ideological prescriptions of science:

attempt, cognitively or materially, to reorganize the diversity and open-endedness of problems and settings into a uniform, quasi-laboratory version that can be subjected to standardized, universal, and precise analysis and solution. Ordinary lay knowledge typically eschews this epistemology of control and universalism and the prescriptive commitments that attend it. (Wynne, 1995: 374)

For example, although numerous studies show on the basis of quantitative evidence that breastfeeding confers a number of nutritional, immunologic and economic advantages over formula/bottle-feeding, and numerous professional medical organizations endorse breastfeeding on the basis of that evidence, only 20 percent of US infants are breastfed through six months of age (Hausman, 2000: 271). Obviously, there is a significant gap between the rational medical conclusion that mothers should try to breastfeed their babies and the reality that most US mothers do not. Hausman has suggested that the primary factors responsible for this discrepancy are social stigmas about motherhood in general and breastfeeding in particular. **Rationalist medical rhetoric has failed to effectively persuade most American mothers to breastfeed in the face of these social stigmas.** Quantitative, rule-driven evidence does not address the issues that concern these women and, however 'rational', has not convinced them to follow what is deemed a healthy practice.

Patients' experiences, preferences and values, then, represent something of a problem for practitioners who, informed by the classical model, are committed to the 'rational' pursuit of improved health outcomes. After all, as Hunter has observed, 'nothing, not even test results from another

hospital, is more suspect than a fact reported by a patient' (Hunter, 1996b: 226). Greenhalgh and Hurwitz have noted that 'in contrast with a list of measurements or a description of the outcome of an experiment, there is no self evident definition of what is relevant or what is irrelevant in a particular narrative' (Greenhalgh and Hurwitz, 1999: 48). Even the experiences of physicians represent a danger to reliability: as the Evidence-Based Medicine Working Group warns, 'in the absence of systematic observation one must be cautious in the interpretation of information derived from clinical experience and intuition, for it may at times be misleading' (1992: 2421). Within the frame of the classical model of rationality,

conclusions accepted on the basis of experience do not have the necessity that characterizes reasoned results . . . In other words, a characteristic feature of rational knowledge [under the presuppositions of the classical model] is that it provides us with a grasp of necessary connections between the items that concern us, and experience fails to measure up to this demand. (Brown, 1990: 15–16)

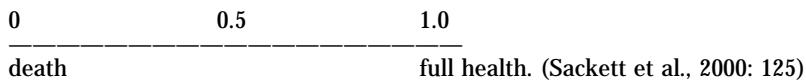
At the same time, textual evidence suggests that many western medical personnel believe that limiting the information admitted into the medical decision-making process only to what is 'rational' in the classical sense omits an essential dimension of what it means to 'treat' a patient:

physicians regularly talk about the 'palliative' treatment of cancer, but we do not assess the patient's palliation in terms of relief of pain, or the ability to perform acts of daily life; we usually assess only his survival time, his white-cell count or the size of his tumor. (Feinstein, 1970: 851)

To be sure, many advocates of EBM are well aware of the need to integrate patients into the clinical decision-making process. As Haynes et al. have pointed out, 'patients' preferences were incorporated into the first model of evidence based medicine' (2002: 1350). In addition to the other skills necessary to conduct EBM, proponents such as Guyatt et al. 'would now add an understanding of how patients' values affect the balance between advantages and disadvantages of the available management options and the ability to appropriately involve the patient in the decision' (2000: 1294). Indeed, Sackett et al. (2000), in their book *Evidence-based medicine: How to practice and teach EBM* center their approach to EBM around the involvement of patients in the application of 'best evidence' to their own situations. Attempts to address issues of importance to patients (such as the impact of a disease or its treatment on the patient's quality of life) from within the frame of the classical model of rationality, however, result in an essential tension, an anxiety apparent in the rhetoric of those who attempt to involve patients in 'rational' medical practice.

This anxiety is expressed in the way Sackett et al. frame the question of how to include patients in decision making: 'Is there some quick way to accomplish this', they ask, '*that doesn't do too much violence to the truth?*' (Sackett et al., 2000: 125, emphasis added). Both the negative terms in

which Sackett et al. articulate this question and their solution to it suggest how problematic it can be to solicit patient involvement in making decisions under the assumptions of the classical model of rationality. Sackett et al. offer practitioners the following scale, which provides a way for patients to express their preferences for a given medical intervention in quantitative terms:



The patient is instructed to make a mark on the rating scale to indicate how she would value the target event they hope to prevent with therapy and a second mark to correspond with how much she wishes to avoid an adverse reaction from that therapy. Using this scheme, healthcare providers can then ask their patients to ‘make value judgements about the relative severity of the bad outcome we hope to prevent with therapy and the adverse event we may cause with it’ (Sackett et al., 2000: 124). This rating scale generates a mathematical datum that will ‘help the patient express how severe he considers one of them relative to the other’ (Sackett et al., 2000: 124). In this way the patient can provide a *quantified* expression of her relative preferences for pursuing a therapy in terms of her own experience of her quality of life. In Sackett et al.’s approach to EBM, this ‘patient preference’ datum is then further mathematically integrated into the clinician’s assessment of the probability of outcomes. **By quantifying the patient’s experiences, preferences and values, Sackett et al. hope to rationalize them.**

However, as Greenhalgh has observed, ‘those of us who practice medicine in a clinical setting know all too well that clinical judgements are usually a far cry from the objective analysis of a set of eminently measurable “facts”’ (Greenhalgh, 1999: 323). She has asked what of epistemic and ethical importance is lost by restricting patient involvement in decision making to such quantifications. Indeed, **Foucault has claimed that the application of systems of measurement upon humans has worked to constitute the person as a ‘describable, analyzable object’ (Foucault, 1995: 190), creating a machinery of power/knowledge that ultimately subjugates the individual.** Nor does Sackett et al.’s quantification procedure strictly meet the requirements of the classical model of rationality – i.e. adherence to a rule-governed procedure that will yield universal and necessary results. Yet, **we would argue that this points less to a weakness in Sackett et al.’s attempt to integrate patient preferences into EBM than it does to the problems inevitably raised by attempts to apply the classical model of rationality to most actual human decision-making contexts.** We would argue that attempting to address issues of importance to patients (such as the impact of a disease or its treatment on the patient’s quality of life) from within the frame of the classical model of rationality raises intractable problems that

prompt inappropriate and/or inadequate medical practices and hamper efforts to effectively and humanely involve patients in medical decision making.

A number of commentators within the western medical community have asserted that medical practice calls for forms of reasoning that do not strictly conform to the classical model of rationality. Hunter, for example, has suggested that medical practice must supplement '*episteme*, or scientific knowing', which 'has to do with the settled knowledge of stable objects', with '*phronesis*, or practical reasoning . . . the sort of knowing called for when the objects are changeable or ideographic' (Hunter, 1996b: 229). To ensure our decisions are not the product of bias or dogma, however, they must still conform to our common-sense definition of rationality:

when appropriate rules are available we expect a rational person to follow those rules. But we also expect a rational person to be capable of acting sensibly without rules, and we expect a rational person to provide reasons for whatever conclusion she eventually arrives at even when no rules are available. (Brown, 1990: 184)

Textual expressions of the anxiety that inevitably stems from the ideological force of the classical model applied in medical contexts, to us, constitutes an argument about how to define 'rationality' that is already underway, albeit implicitly, within the western medical community. Rhetorical theorist Schiappa asserts that arguing about definitions ought not to be regarded as a search for conformity to the Platonic essence of a term, but rather as the dynamic negotiation of the terms by which communities make action decisions (Schiappa, 1993). Defining 'rationality', then, should be based not on formalisms, however logically satisfying these may be, but rather on what a group of people decides it needs to believe and do to achieve its goals – in the case of the medical community, to improve patient health (in the broadest sense) and quality of life. Arguing about the definitions of terms like 'rationality' is important as a guide to action, to 'address the *pragmatic* needs of a given community of language-users located in a particular historical moment' (Schiappa, 1993: 413, emphasis in original). Only by arguing about the definition of 'rationality' can the medical community hope to bridge what Greenhalgh has called the 'spurious divide between those who seek to establish general practice on an equal "scientific" footing . . . and those who emphasise the value of the intuitive, narrative, and interpretative aspects of the consultation' (Greenhalgh, 1999: 958).

Toward a new model of rationality

The challenge that faces the medical community is formidable: to envision new paradigms of rationality that can endow vital but nonquantifiable information with a rationalizing force to guide action that, if not equivalent to

the certainty promised by rule-driven (i.e. quantified) procedures under the classical model, can still offer substantial protection against dogma, arbitrariness and bias in medical decision making. Under the presuppositions of the classical model, rule-governed quantification ensured universal and necessary results that protected decision making from these problems. What force(s) can provide this protection for a community that *must* integrate information that cannot be quantified into decision-making processes that cannot always follow rules?

We wish to recommend two postmetaphysical definitions of rationality – specifically, those of Harold I. Brown and Jürgen Habermas – that offer responses to this dilemma promising enough to deserve discussion within the medical community.¹ Neither Brown's nor Habermas's models advocate that quantifiable evidence be forfeited; indeed, both would continue to grant data generated in controlled experimental trials an important role in supporting 'truth' claims. Nor is there anything in Brown's or Habermas's model to necessarily preclude offering patients some way to quantify their experiences, preferences and values; however, both would argue that the datum so produced is not able, *in and of itself*, to ensure that this information can be 'rationally' integrated into the medical decision. In other words, neither Brown nor Habermas would *locate the force* of rationality in such rule-driven quantifications.

Rather than rules, what guides decision making in both Habermas's and Brown's models is judgment – the 'art' so suspect under the presuppositions of the classical model. Judgment, according to Brown, is the 'ability to evaluate a situation, assess evidence, and come to a reasonable decision without following rules' (Brown, 1990: 137). In both Habermas's and Brown's models, the rationalizing force of universal, necessary and rule-driven quantitative evidence is replaced with human judgment, but human judgment functioning within an integrated and mutually reinforcing matrix of:

- intersubjective validation,
- dynamicism,
- freedom from coercion and
- inclusion of all 'expert' stakeholders,

which provides it with a rationalizing force.

Social validation

Both Brown's and Habermas's models replace the rationality of rule-driven processes that give universal and necessary results with the rationalizing force that comes from humans sharing their judgment collectively. Given the many sensory and cognitive limitations that interfere with humans' ability to maintain transparent contact with their world, Brown contends that 'it would be foolish for an individual to place total confidence in her own judgement' (Brown, 1990: 186). Indeed, in the face of these limitations,

both Brown and Habermas consider it impossible for an individual, trapped within her own subjectivity, to know for certain that her judgments are sound or defensible. In Brown's and Habermas's systems, a judgment must be tested by its ability to convince other people of its validity. As Habermas puts it, 'assertions and goal-directed actions are the more rational the better the claim . . . that is connected with them can be defended against criticism' (Habermas, 1984: 9).

Both of these models, then, would replace the *monologic*, rule-driven rationality of the classical model with a *social* rationality achieved through the intersubjective validation of judgments – a process that promises to increase the reliability of decisions because it 'transcend[s] the cognitive limitations of individuals' (Brown, 1990: 186). Indeed, intersubjective validation is already intrinsic to the functioning of science. The peer review process, which few scientists would be happy without, is just such a process of social validation: to be sure, the individual scientist must conform to the algorithms of the scientific method; however, she must also communicatively convince a collective authority that she has done so, and that her interpretations of her resulting data are sound and defensible. Thus, rationality to Habermas and Brown is a 'social phenomenon' (Brown, 1990: 187, Habermas, 1984).

Dynamicism

Even collective judgments, however, can be wrong. As Passamani has noted:

The history of medicine is richly endowed with therapies that were widely used and then shown to be ineffective or frankly toxic. Relatively recent examples of such therapeutic maneuvers include gastric freezing for peptic ulcer disease, radiation therapy for acne, MER-29 (triparanol) for cholesterol reduction, and thalidomide for sedation in pregnant women. (Passamani, 1991: 1589)

So long as decision making relies on a force as fallible as that of human judgment – collective or otherwise – it requires some sort of correcting mechanism that can ensure that, even if certainty is not achieved with each individual decision, at least over the long term the collective is likely to be pursuing the most reliable course of action. Thus, both Habermas's and Brown's models insist on a rationality that is fluid and dynamic – judgments that are responsive to new information. 'We expect a rational person,' claims Brown, 'to be amenable to new ideas' (Brown, 1990: 183) (ideas which are then, of course, subjected to the rationalizing force of social judgment through a process of argumentation). Dynamicism of this kind is, like intersubjective validation, already a feature of science. Scientists rely on the *ongoing process* of experimentation to calibrate the truth of their knowledge with ever-increasing precision, confident that future studies will ultimately correct their methodological or interpretive errors.

A dynamic model of rationality is also a better fit with medical practice, which must deal with individual patients in unique contexts. Because, as

Habermas declares, 'no one has direct access to uninterpreted conditions of validity, "validity" (*Gültigkeit*) must be understood in epistemic terms as "validity (*Geltung*) proven for use"' (Habermas, 1998: 14). Crucial to rational judgment, in Brown's opinion, is that it take into account 'available information relevant to this particular situation' (Brown, 1990: 146). For Habermas and Brown, then, rationality is not the *product* of submission to rule-governed procedures that will yield universal or necessary results; rather, rational persons are those willing to continuously submit to a fluid, dynamic and situation-specific *process* of evidence assessment.

Freedom from coercion

In order to achieve the rational potential promised by this process of dynamic intersubjective validation, both Brown and Habermas recognize that decision making must be completely free and uncoerced, so that decisions can be influenced *only* by the force of best reasons. As Brown notes, 'a consensus that is imposed on the members of a community by external political authority, or by force, or by manipulation of data, or by any of a number of other familiar, unsavory techniques, will not generate rational beliefs' (Brown, 1990: 196). Similarly, Habermas asserts that full rationality can only be realized if all participants in the decision-making process can imagine that they are making the best choice – not the forced choice, the convenient choice, the emotionally compelling choice or the profitable choice, but the *best* one. Only a situation that 'excludes all force . . . except the force of the better argument' is a situation that 'also *excludes . . . all motives except that of a cooperative search for the truth*' (Habermas, 1984: 25, emphasis added). Habermas calls this situation the 'ideal speech situation' – an ideal which frees participants to respond to the force of best reasons rather than coercion or manipulation.²

Inclusion of all stakeholders

One of the presuppositions of the ideal speech situation particularly germane to issues in medical decision making is Habermas's idea that all stakeholders be given an equal opportunity to participate in the decision-making process, and that the action ultimately decided upon will reflect what all stakeholders have come to agree is the decision best supported by reasons. This means that patients, as well as physicians and other health-care providers, must all participate in decisions about diagnostic, therapeutic and preventive strategies in order for the rational potential of those decisions to be fully realized in the practice of medicine. Indeed, to Habermas the mere *act* of them doing so is one of the guarantors of the rationality of the decision-making process.

Herein lies one of the essential differences between Habermas's model and Brown's. While the essentially democratic impulse to solicit the input of *all* stakeholders under free and uncoerced conditions provides Habermas's guarantee of rationality, for Brown it is the willingness of

stakeholders to submit to expert judgment that provides this guarantee. Brown believes that it is the exclusion of some people from the decision-making process that guarantees its rationality: 'not everyone can exercise judgement on every topic,' Brown asserts. 'Judgements on a topic can only be made by those who have mastered the body of relevant information' (Brown, 1990: 146).

Each of these models offers challenges to the inclusion of patient experiences, preferences and values in rational medical decision making. Brown's insistence on the importance of expert judgment problematizes the ideals of patient freedom and participation that appear to have wide support within the medical community. Sackett has even argued that the influence of experts is a threat to the ongoing pursuit of truth in science (Sackett, 2000: 1283). At the same time, Habermas's idea that rationality inheres in the participation of *all* stakeholders must be reconciled with studies that have found that at least some patients do not *want* to be involved in making diagnostic or therapeutic decisions (Ende et al., 1989).

Certainly, there is a great deal more to be learned about how power and expertise interact within the patient/carer relationship, and how this interaction influences the subsequent compliance of the patient with the decisions made. As Kangas has observed, 'People are not merely forcibly dependent on expert knowledge; there are resistance and differences, too, visible in forms that can be quite subtle. It is necessary to analyse how people cope with expert knowledge' (Kangas, 2002: 303). It has, in any case, grown increasingly difficult to separate patients and healthcare providers on the basis of their respective familiarity with the medical literature. As Shaw has noted, the increasing public availability of medical information that was once largely restricted to clinicians has made it problematic to conceive of a 'laity who holds a separate and distinctive set of beliefs from expert knowledge systems' (Shaw, 2002: 287). Indeed, Tannenbaum has argued that EBM functions, at least in part, to destabilize the exclusive epistemic authority of the individual clinician in that it:

argues for the fundamental separability of expertise from expert and of knowledge from knower, and the distillation of medical truth outside the clinical encounter would seem to allow both buyers and sellers in the healthcare market to act independently and rationally. (Tannenbaum, 1995: 99)

It might be useful to regard the patient as having her own special expertise in so far as she is in the best position to understand her priorities, judge her experience of her condition and determine how medical decisions will affect her quality of life. In his work on the public understanding of science, Wynne has criticized scientists' habit of characterizing the public as 'ignorant' or 'irrational'. Perhaps the criticism can be leveled against this same impulse in some healthcare providers. As Wynne observes, scientific knowledge is a

culture of control and standardization . . . that engenders ambivalent responses

from those who encounter it in public. By constructing the public as ignorant, when that public may in its own idiom be expressing legitimate concerns or dissent, scientific institutions inadvertently encourage yet more public ambivalence or alienation. Thus the whole rationalist temper of modern society may undermine itself by the nonreflexivity of science about its own constructions of 'the public' and the institutional factors that give rise to these constructions. (Wynne, 1995: 364-5)

Enlisting the full participation of patients in medical decision making may be the only way to ensure, then, that their interests, in the terms in which they prefer to experience and express them, are addressed and integrated into the action decision. These ideas need not be regarded as incompatible with EBM. As Greenhalgh has noted:

Appreciating the narrative nature of illness experience and the intuitive and subjective aspects of clinical method does not require us to reject the principles of evidence based medicine. Nor does such an approach demand an inversion of the hierarchy of evidence so that personal anecdote carries more weight in decision making than the randomised controlled trial. Far from obviating the need for subjectivity in the clinical encounter, genuine evidence based practice actually presupposes an interpretive paradigm in which the patient experiences illness in a unique and contextual way. Furthermore, it is only within such an interpretative paradigm that a clinician can meaningfully draw on all aspects of evidence – his or her own case based experience, the patient's individual and cultural perspectives, and the results of rigorous clinical research trials and observational studies – to reach an integrated clinical judgement. (Greenhalgh, 1999: 325)

Although neither Habermas's nor Brown's models offer certainty, we would argue that these four elements – intersubjectivity, dynamicism, freedom from coercion and inclusion of 'expert' stakeholders – offer, when functionally synthesized, a source of rationalizing force that can protect decision making from arbitrariness, bias and dogma. None of these elements is incompatible with empiricism or biostatistical reasoning. However, neither are they inherently incompatible with integrating patients' experiences, preferences and values in nonquantifiable forms. These models, then, can offer an attractive paradigm of rationality to a discourse community that requires rational decision making within situation-specific, contingent and often nonquantifiable circumstances.

Ultimately, the test of any definition of rationality, we would argue, must be its compatibility with the pragmatic needs of its community. Given the widespread belief in the importance of patient involvement in medical decision making, it is necessary that the western medical community's definition of 'rationality' include mechanisms that permit patient involvement to be regarded as rational. We would argue that the arrival of EBM onto the scene provides yet another compelling reason for the medical community to conduct an explicit discussion of what it means by a 'rational' medical practice. These discussions must consider not only the logic of

including patients in medical decision making, but the ethics and pragmatics of doing so. We would predict that these discussions would inevitably lead to changes in medical practices. For example, such discussions would almost certainly alter the way medical personnel are educated. As Greenhalgh and Hurwitz have argued:

the relentless substitution during the course of medical training of skills deemed 'scientific' – those that are eminently measurable but unavoidably reductionist – for those that are fundamentally linguistic, empathetic, and interpretive should be seen as anything but a successful feature of the modern curriculum. (Greenhalgh and Hurwitz, 1999: 49)

Replacing the classical model of rationality with either a Brownian or Habermasian one would provide epistemic grounds to make room in the medical school curriculum for training in the theory and practice of communicating with patients, including analyzing and rationally accommodating their resistances. It would also, we believe, radically alter the complexion of the typical clinical encounter: dealings with patients would come to be regarded as a collaboration among a team of experts (physician, nurse, laboratory personnel, patient, family, etc.) rather than the delivery of a 'magic bullet' of authoritative medical expertise, and protecting the freedom and equality of this collaboration – because these attributes are the source of its rationalizing force – would become the prime clinical objective at both individual and institutional levels.

As Solomon has argued, 'scientific knowledge needs to be partnered with complementary social understandings, even at the expense of conceptual purity, if it is to become usable as citizen knowledge' (Solomon, 1992). Both Habermas's and Brown's models, which make room for such social understandings, offer promising solutions to the problem of how 'evidence' that derives from patients' experiences, preferences and values can be regarded as rational. If Habermas and Brown are correct, truly 'rational' medical practice can only be achieved by both patients and healthcare providers engaging in ongoing debate regarding what constitutes 'best' medical practice in each case.

Notes

1. While Habermas is probably familiar to most readers, many may not have heard of Brown. Brown, an American philosopher who works in the analytic tradition, is concerned with epistemology and philosophy of science.
2. It is important to understand that Habermas's intent in speaking of the ideal speech situation is not to list conditions that must be factually present in a decision-making situation for it to be rational (Kline, 1981; Wenzel, 1981). Rather, Habermas is offering an account of the presuppositions that must drive the behavior of participants in argumentation – people who take up a role in the process of making, evaluating and accepting claims and counterclaims. Coerced people do not generally bother to assess the validity of what they are being asked to do – everyone involved understands that their behavior is being driven

by threats rather than a genuine enlistment of their rational acquiescence. Few people would bother to assess the validity of claims and evidence unless they believed their efforts to do so would actually address issues of validity. The ideal speech situation, then, is Habermas's name for the 'general symmetry conditions that every competent speaker must presuppose are sufficiently satisfied insofar as he intends to enter into argumentation at all' (Habermas, 1984: 25).

The rationalizing force of the ideal speech situation cannot be overstated. In Habermas's model, what stands in for the universality and necessity of results is the social obligation to resort to collective justification in rational decision making that, because noncoerced, is theoretically capable of attaining the assent of any arguer, anywhere and at any time. Similarly, Perelman has offered an explanation of why arguments addressed to a 'universal audience' have a built-in rationalizing force: 'Argumentation addressed to a universal audience must convince the reader that the reasons adduced are of a compelling character, that they are self-evident, and possess an absolute and timeless validity, independent of local or historical contingencies' (Perelman and Olbrechts-Tyteca, 1969: 32). Thus, in this way, Habermas claims, communication in his model of rationality attains pragmatically the universal results offered by rules in the classical model of rationality.

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