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## Evidence based medicine: Socratic dissent

#### David Grahame-Smith

SOCRATES: Tell me, Enthusiasticus (Meta-analyticus), they say you are espousing a new form of medical practice. Is that so?

ENTHUSIASTICUS: Indeed Socrates, and very effective it

SOCRATES: Does it have a name or description?

ENTHUSIASTICUS: Yes, we have called it evidence based medicine.

SOCRATES: How very interesting, albeit unaesthetic. But I do find the title that you have given this new form of medical practice rather alarming. I thought that all doctors were trained in the scientific tradition, one tenet of which is to examine the evidence on which their practice is based. How then does this new evidence based medicine differ from traditional medicine?

ENTHUSIASTICUS: Well, Socrates, one problem is that most doctors have a very narrow perspective, limiting themselves to their own experience and that of a relatively few colleagues with whom they exchange views. This sometimes leads them to make erroneous conclusions.

SOCRATES: Do you imply that in their narrowness they fail to search for evidence which might cause them to reach a different conclusion or allow them to come to a more balanced decision?

ENTHUSIASTICUS: Precisely, Socrates, you have hit it in

SOCRATES: How do you, Enthusiasticus, manage to gain access to this evidence which more ordinary doctors find inaccessible? Is it hidden away?

ENTHUSIASTICUS: Sometimes it is. We have sophisticated methods, using information technology, for searching out and recording information about the efficacy of treatments and case management from all over the world. Also scientists and doctors do not always publish the results of their studies, particularly if they have been negative. I and my colleagues have ways of unearthing such results, which can on occasion change views about the efficacy of a treatment.

SOCRATES: What is the cause of this reluctance to publish negative results? Is it because the science is poor?

ENTHUSIASTICUS: No, the science is often quite good,

### See pp 1122, 1146, 1141 and editorial by Davidoff et al

but journals and authors are not so interested in negative conclusions; things are much more interesting if they turn out positive.

SOCRATES: So, Enthusiasticus, sentiment still holds sway in medicine.

ENTHUSIASTICUS: What do you mean?

SOCRATES: I have often wondered about the application of the null hypothesis to studies planned to find out if a new treatment works.

ENTHUSIASTICUS: How so?

SOCRATES: Is it not the purpose of the null hypothesis to assume that the new treatment is no better than the old treatment or even no treatment at all? This is then the beginning of the application of statistical theory to the practical problem.

## "Journals and authors are not so interested in negative conclusions."

ENTHUSIASTICUS: I had no idea you were so well versed in statistical theory.

SOCRATES: I am not. The null hypothesis is commonsense, albeit a bit topsy turvy. Statistical theory is something else. My point is that I have never met a doctor who practises medicine in full accordance with the null hypothesis, nor, and this is more pertinent, one who applies it completely dispassionately to the investigation of the efficacy of treatments. All the doctors I know hope very much that their new treatments will work, whether it be in individual patients or in groups of patients in a clinical trial. Is it really possible to theorise on the question of proof of efficacy by one set of rules but approach the practical aspects of clinical testing of treatments by another?

ENTHUSIASTICUS: Well, that is the exact purpose of the double blind, randomised clinical trial: to remove from clinical studies the bias produced by just these motives you describe.

SOCRATES: So is this evidence based medicine going to fundamentally change the way doctors test their treatments?

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Socrates never met a doctor who practised medicine in full accordance with the null hypothesis

ENTHUSIASTICUS: Not essentially, but it will help doctors take a wider view of the results of clinical trials and practice and avoid the tendency of doctors to rely too much on their own limited experience, which may be flawed because of its numerical inadequacy and biased recollections. We have developed statistical methods and reasoning to enable us to take a dispassionate overview of the results of given medical practice.

SOCRATES: This seems admirable to me. I cannot understand why doctors might choose to practise by a method based on inadequate personal impressions rather than the more objective and comprehensive method you describe.

ENTHUSIASTICUS: Perhaps it is because personal experience in medical practice has such a strong influence on a doctor's future actions.

SOCRATES: Is this an expression of the conflict between the science and the art of medicine?

ENTHUSIASTICUS: Perhaps.

SOCRATES: Does it apply equally to the matter of diagnosis as much as treatment?

ENTHUSIASTICUS: Why do you ask?

SOCRATES: Because my physician friends are always emphasising to me how important experience and pattern recognition are in the making of a good diagnostician. Do you agree with that?

ENTHUSIASTICUS: To a great extent I do, though there are areas of diagnosis which can be improved by the application of the methodology I have described in respect of treatment assessment.

SOCRATES: Is this difference between the impact of personal experience on the diagnostic art, but its misleading influence in the appraisal of practice outcome, emphasised during the education of young doctors?

ENTHUSIASTICUS: I think not.

socrates: What do doctors learn first and what aspects of medicine are most emphasised during medical

ENTHUSIASTICUS: Undoubtedly all those matters which aid the accurate diagnosis of disease.

SOCRATES: A strong part of which is this experiential aspect?

ENTHUSIASTICUS: Indeed.

SOCRATES: Perhaps then, the young pick up the experiential art of diagnosis from their teachers and mistakenly hope to apply the same approach to treatment, which as you have explained would lead to bad habits.

ENTHUSIASTICUS: I shall have to think about that.

socrates: Tell me, do you yourself apply the fruits of your labours?

ENTHUSIASTICUS: Unfortunately not. I am so busy applying this new methodology to the appraisal of medical practice that I no longer have time to see patients myself.

SOCRATES: I sympathise. I spend so much time in critical philosophy of an abstract nature that practical application of it has become impossible. I must warn you though that your colleagues, like mine, might not always appreciate your good intentions.

Even now my detractors are planning to put me on trial for subversive thought. You must see that if you yourself are not constantly versed in the infinite variables of patient presentation and response to treatment, and dealing with them every day, you will be prey to criticism from those who do.

ENTHUSIASTICUS: I have recently become aware of that and I am unsure how to deal with it. The matter is particularly acute because the cause of evidence based medicine has been taken up by those who now manage our medical practice.

SOCRATES: What is their interest?

ENTHUSIASTICUS: They are particularly anxious to get value for money and wish to be sure that doctors' actions are effective and worth paying for.

# "I am so busy applying this new methodology . . . that I no longer have time to see patients."

SOCRATES: So there must be a large number of doctors practising cost ineffective medicine for such a grand scheme to be enacted.

ENTHUSIASTICUS: I guess so.

SOCRATES: Those are words I would never have expected to hear pass your lips. That aside, however, are you sure that the motives of the managers are as pure and intellectual as you imagine?

ENTHUSIASTICUS: How could it be otherwise?

SOCRATES: Is it not a manager's job to ensure that health care is delivered in the most cost effective way possible? And do not all politicians exhort purchasers to get the best bargain?

ENTHUSIASTICUS: Indeed.

SOCRATES: Then what do they perceive as the main barrier to their purpose?

ENTHUSIASTICUS: Lack of evidence as to what is really

SOCRATES: It would be nice, Enthusiasticus my gullible friend, if it were really so, but I doubt it. The main barrier they perceive is an anarchic medical profession spending their money in a profligate and unnecessary manner. They see your beloved evidence based medicine as a means to shackle the doctors and bend them to their will. That, I am certain, is why they are so enthusiastic about it. Beware, Enthusiasticus, that you are not used as a dupe in a political game of health economics. Remember, hemlock may be down the line.

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