Dr. Engel
Her letter sent
to Dr Black -

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Dear Dr. Engel:

Thank you for allowing your identity to be revealed to me (this sounds very melodramatic!), so that we might pursue a dialogue regarding the art and the science of medicine. Thank you also for forwarding me your article, "How Much Longer Must Medicine's Science Be Bound By A 17th Century World View?" I might as well confess at the outset that discovering my reviewer had been the George Engel was a somewhat intimidating experience for me, as I have been a great admirer of your work for years. My career in family medicine has benefitted greatly from studying your biopsychosocial model. However, I will simply plunge into this exchange as best I am able, and hope our dialogue can proceed with respect on my part, but without a paralyzing humility!

As you suggest so eloquently in your article, the modes of investigation which have risen to the fore in the scientific community represent a specific world view (paradigm). This world view is based on certain objectivist assumptions, and adopts a reductionistic, technical-rational approach to the posing and solving of problems. You are also perfectly correct in pointing out that more recent developments (eg., Einstein's theory of relativity and many of the discoveries of the new physics) challenge both the assumptions and relevance of more traditional scientific methods for encompassing and comprehending reality.

Perhaps the dichotomous split between science and art which I suggested in my article makes too many concessions to this limiting and "old-fashioned" view of science. I am perfectly comfortable redefining the nature and process of scientific investigation to include more naturalistic methods, which take a constructivist approach to the comprehension of reality, and are not reluctant to place the observer in the midst of the observation. Thus, I agree completely that the process you describe in your moving encounter with the patient who cried is a scientific process, and well

deserves that label.

However, there is also a sense in which your interaction with that patient can be understood as an illustration of professional artistry. In this interpretation, you "designed" a "performance", which was characterized by a certain aesthetically pleasing and emotionally moving quality. What happened between you and your patient appealed not only to the intellectual curiosity of your "audience," (the observers viewing your interaction, and now, in recapitulation, the readers perusing your manuscript) but to their hearts as well. Yes, you were a scientist making, formulating, testing and modifying hypotheses, framing and implementing "mini-experiments" and making accurate and verifiable observations. But I believe you were also functioning as an artist, participating (with your patient) in the creation of an experience which has as much in common with the performance of a master cellist as it does with the investigation of a researcher.

I have long respected your efforts to redefine and broaden the parameters of science, to make it more applicable to the requirements of a practice profession such as medicine. Ultimately, what is science depends a great deal on what the investigator is personally comfortable doing, feeling, and believing. Bench research has become synonymous with science because, once you accept its assumptions and parameters, it can provide a tremendous feeling of control and order and, within a certain realm, contribute inarguable advances to human welfare. However, as Einstein pointed out, "The scientific method can teach us nothing else beyond how facts are related to, and conditioned by, each other. ...Knowledge of what is does not open the door directly to what should be" (Out of My Later Years, pp.21-30). It is clear that many individuals feel that their most important questions cannot be answered by science as it is currently defined.

However, this implies only that we need to redefine science, not that we need to think of practice in terms of art. I would argue that this latter approach has something to offer as well. For example, thinking of oneself as a scientist produces certain beneficial results: one strives for accurate observation, for reliable data, for replicable intervention. However, thinking of oneself as an artist may also free important dimensions of the practitioner: eg., the trust to more readily access tacit knowledge, the willingness to take risks in intervention, the desire to be creative as well as accurate in one's practice. Therefore, it seems to me acknowledging that the practice of medicine comprises art as well as science is not yet an outmoded distinction.

What I believe is really happening in the example which you cite is that you are applying, in an ongoing way, a scientific approach to analysing and understanding an artistic act (ie., the interview with the patient). I would still claim that the content of your interaction is aesthetic and artistic. An observer might well be moved to say, "That was a beautiful encounter," and feel emotionally moved much as if she had witnessed a magnificent violin recital, or seen a powerful sculpture. However, in addition to executing a virtuoso performance, you also were engaging in a process of reflection-in-action (Schon, Educating the Reflective Practitioner, 1987) by which you systematically and rigorously analyzed, reformulated, and experimented with the encounter in a moment-by-moment process. Thus science is applied to art, so that the latter becomes more accessible, something still to marvel at, but also to comprehend.

I believe the great fear associated with the term "art" is that it represents a process which is essentially inaccessible, unknowable, un-understandable, and certainly not teachable. Thus it represents a realm in which mystery and confusion reign. Some of the comments in your review of my article speak to this point. However, it is equally reasonable to argue that, at least to some extent, it is possible to understand and replicate this "artistic" process. The ability to analyze the artistic process, however, does not make it any less artistic, especially when non-reductionistic means are employed.

Your concept of the engaged scientist I believe is firmly rooted in more naturalistic scientific traditions and thus I support your emphasis on relational as well as observational techniques as part of the scientific process. In this vein, your point about empathy and compassion facilitating data collection was absolutely delightful, and of course completely true. Yet in observing the "scientific" value of such ways of being, we should not lose sight of the reality that, in fact, the scientific "dialogue" which these behaviors and attitudes facilitate is occurring simultaneously on aesthetic, emotional, and spiritual levels as well: relation, many have argued, is what defines us as humans. It is perhaps too limiting to view the relational mode as exclusively a scientific method, when it clearly comprises other dimensions as well.

In terms of the practicing clinician, learning to rely on impulses and intuition (professional artistry) I believe is very much a part of effective practice. But so that this is not a random, trial-and-error process, it is equally important to apply, through a concurrent process, the scientific method to these intuitions, to understand

better how they function in relation both to the patient and the physician. This in the future will allow the physician to function in a spontaneous manner, simultaneously grounded in reliable clinical research data.

I have taken more space and words than I had intended, grappling with something I myself am far from understanding completely. There still remains much to illuminate. In any case I thank you for allowing this opportunity for "relation" to develop between us. If this letter has provoked more questions than it has answered (and I hope that might be the case), please do not hesitate to continue our dialogue.

Sincerely,

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