

Curiosity, Discipline, and Joy; and the Greatest of These Is Joy

THE house lights go down, you settle in your seat, and the theater quiets to murmurs of anticipation. The stage lights go up, and, after brief introductions, out walk three men who have shaped our specialty and who continue to shape it. Their names—Severinghaus,¹ Miller,² and Shafer³—are familiar to most of us as inventors, textbook writers, and researchers, but we are probably a little vague on the specifics. Then they begin telling us their stories, and, for a while, we understand their ideas and how they apply to each of us and to our specialty.

For the first time, ANESTHESIOLOGY presents to you articles based on the three primary lectures of the Annual Meeting of the American Society of Anesthesiologists: the Emery A. Rovenstine Lecture, the John W. Severinghaus Lecture on Translational Science, and the Honorary Foundation for Anesthesia Education and Research (FAER) Research Lecture. You can view the two former lectures at <http://2008highlightscme.asahq.org>. Unfortunately, the Honorary FAER Research Lecture was not recorded in 2008. Although these articles lack the drama of the lectures themselves, they clearly capture the ideas and the story lines behind the drama. If you were not able to attend these wonderful lectures, and even if you were, I encourage you to spend a few minutes reading these articles. These men describe who we are as professionals and the tremendous gifts our specialty has brought to medicine and to society. My goal in this editorial is to provide a brief synthesis of these ideas, in part to help frame the importance of their central messages, but mostly to peak your interest to read them.

On the surface, these men's life stories are quite different, as are their approaches to their lectures. All three men are anesthesiologists. John Severinghaus is a physicist who because a physiologist, and talks about building better gadgets. Ron Miller, the most recognized anesthesiologist on the planet, is a research scientist, but also an administrator and politician (in the best sense of the word) who talks about processes and policies. Steve Shafer is a pharmacologist and computer programmer

who talks about evidence and probabilities. Of course, their accomplishments encompass more than these simple nouns, but they clearly are very different people with very different skills. Yet the fascinating thing about their lectures and articles is the similarity of their central themes and conclusions.

This similarity is no more obvious than in their opening statements, which could be interchanged among articles surprisingly well. Ron Miller's opening regarding "John Snow's remarkable curiosity and 'fire of investigation' . . . [which] went beyond the boundaries of anesthesiology in the pursuit of excellence,"² could easily have been that of John Severinghaus, whose opening that "translational science has steadily improved the specialty of anesthesiology"¹ could belong to Steve Shafer. And what better way for Ron Miller to have begun than with Steve Shafer's quote that "you must keep an open mind, but not so open that your brains fall out!"³

I believe that the personal journey described by each of these authors exemplifies and guides the journey of our specialty to survive and to grow. Three central themes—curiosity, discipline, and joy—emerge in these stories and interweave to produce remarkably similar conclusions.

Curiosity

We enter medical school with a deep sense of curiosity, and we cannot be excellent clinicians or scientists if we lose this. It is the energy that drives our medical specialty and advances our care of patients. Curiosity comes out most prominently in John Severinghaus' article, especially his anecdotal experience as a resident when he received succinylcholine from Peter Safar to test its neuromuscular blocking properties. Or the curiosity that drove his high-altitude physiology studies to determine how humans adapt to hypoxemia. Ron Miller also infers Peter Safar's curiosity and invites us to "imagine the impact when reviving people who were near death by cardiopulmonary resuscitation."² He goes on to describe the pride and excitement he felt to be a part of a department of anesthesia that was curious about big questions. What regulates uterine perfusion during pregnancy? How can we define anesthetic potency? Why does anesthetic potency differ from one person to another? Why do airways collapse in premature infants and how can we prevent deaths from this problem? Steve Shafer's entire article expounds on how we should respond to curiosity with critical thinking, and one only needs 5 min with Steve to hear the phrases "That's really interesting!" "I wonder why . . ." or "Well, that's curious!"

This Editorial View accompanies the following three articles: Miller RD: The pursuit of excellence: The 47th Annual Rovenstine Lecture. ANESTHESIOLOGY 2009; 110:714-20; Severinghaus JW: Gadgeteering for healthcare: The John W. Severinghaus Lecture on Translational Science. ANESTHESIOLOGY 2009; 110:721-8; Shafer SL: Critical thinking in anesthesia: The 8th Honorary FAER Research Lecture. ANESTHESIOLOGY 2009; 110:729-37.

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If vigilance is the cornerstone for keeping our patients safe today, curiosity is the force that will lead to safer care tomorrow. And better care. As clinicians, we constantly experiment to make our daily practice safer, easier, more efficient, and more pleasant for our patients. This is perhaps more akin to the “gadgeteering” John Severinghaus refers to than translational science, but it is nonetheless driven by curiosity. Each of these leaders tells us with only slight variations to beware of those who disparage curiosity and to nurture curiosity in ourselves and in our specialty—especially during these times of difficult research budgets and focus on clinical incomes.

Discipline

Steve Shafer tells us that “as practitioners of a science-based profession, we also have a responsibility to the society in which we live to function as role models for critical thinking.”³ Modern medicine has grown precisely because of critical thinking and a disciplined search for evidence, even when dogma persecuted this search, such as the need to practice postmortem dissection and analysis in secret during the Middle Ages. We believe that touch can be therapeutic and that preoperative discussions and assurance allay anxiety and produce analgesia because of critical research and evidence. As Steve Shafer points out,³ we do not believe that magnets cure cancer, because of lack of evidence. As scientific illiteracy grows in the United States, Shafer’s treatise on the importance for us as physicians to think critically and to lead society in this regard could not be more timely. I urge you to read it.

Ron Miller discusses the need for a disciplined focus for anesthesiologists as a specialty and as individuals. “The pursuit of excellence should always be the number one agenda item for all anesthesiologists.”² Autonomy and control over intellectual content are essential for the specialty, and Miller describes practical processes to address these. Part of this focus involves clear definitions of the big problems in our specialty. As opposed to intraoperative death from anesthesia, a remarkably rare event, the perioperative period remains dangerous and unpleasant for our patients and can result in long-term disability. Ron Miller continues the emphasis placed by Jerry Reves⁴ in his Rovenstine Lecture to expand our role in the perioperative period by a disciplined examination of the big problems.

And John Severinghaus epitomizes the hard-work aspect of discipline. What began as his personal need for

rapid blood gas analysis in his basic research laboratory led, through years of disciplined hard work, to a revolutionary device, the prototype of which rests in the Smithsonian Museum and which we now take entirely for granted in our daily practice.

Joy

It is hard not to sense the underlying joy in these articles, just as it was impossible to miss it during presentation of the lectures. Each author expresses his joy in a unique manner. Ron Miller paints a vivid image of joy when he witnessed and contributed to a group of dedicated anesthesiologists who were asking important questions that ultimately revolutionized clinical care. One feels immersed along with him in the excitement of the time at the University of California, San Francisco. Steve Shafer obviously delights in thinking about problems, whether it is why we choose not to use a cheap device that doubles the likelihood of survival after cardiac arrest or whether it is how prior probability explains which door to choose in *The Price Is Right*.³

Joy most clearly jumps out at you from every paragraph of John Severinghaus’ article. Here is an account of a life filled with joy of discovery, even when it flops. Although each speaker received a standing ovation, the one for John Severinghaus was perhaps a bit longer and a bit louder, I think because the joy he expressed resonated with the audience. If you were not there, I highly recommend watching the video.

Three great men and three facets of life and growth in us as individuals and as a specialty.

Curiosity: “We are all trying to find our way, but some of us are looking at the stars.”²

Discipline: “If you don’t get the facts, the facts will get you.”³

Joy: “Gadgeteering has been great fun!”¹

Thank you to all three!

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