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OP-ED CONTRIBUTOR

Dead Body of Knowledge

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AT the risk of sounding like a fuddy-duddy, I would like to say that sometimes, medical imaging isn't all it's cracked up to be.

As a resident in psychiatry, I depend on the technology to treat my patients. From countless computers in the hospital's hallways and at nurses' stations, I call up images of the people I treat: the black, white and gray CT scans of their skulls, the nuanced M.R.I.'s of their spinal cords and ligaments, the rotating Spect scans that show in three dimensions how well — or how poorly — blood flows through their brains. I can leave the room of an 89-year-old woman who has begun picking imaginary bugs out of the air, look into a screen, and see the tumor that is causing her delirium.

Now however, many medical schools are beginning to argue that imaging technology has improved to the point where it should be used in place of the dissection of human cadavers as the central tool of instruction for young doctors-to-be. This is a mistake. No matter how detailed and versatile they become, computer images can never provide the indelible lessons that novice doctors learn from real bodies.

Nearly every medical student in America begins his career by entering a room full of cadavers and taking one of them apart, layer by layer, piece by piece. Doctors have shared this experience for centuries, ever since Vesalius, Da Vinci and Michelangelo defied religion and government, stole bodies from graves and churches, and dissected by candlelight in an audacious pursuit of knowledge about the human body. The process is what you would expect: messy and smelly, tedious and time-consuming, emotionally and physically difficult. It is at times awe-inspiring, and at other times profoundly upsetting. It is also, for the medical schools, very expensive. Even though cadavers are donated, it can cost more than \$2,000 to prepare a body for dissection.

So medical schools are beginning to re-evaluate their anatomy curriculum in the face of the perhaps inevitable argument: Why not reduce, or eliminate altogether, the burdensome cost of dissecting cadavers and replace it with this new and astounding technology? The computers and software — a considerable expense, but one that need be incurred only once — allow students to study images of the body from every angle and on every plane. They can peel away the muscle on a virtual leg to see the bone beneath, then click a different button, reattach the muscle and see how the limb moves.

Computers can show things that still and lifeless cadavers cannot — blood pumping in real time through the heart's chambers, for instance. And it is far easier to visualize nerves and vessels when they're color-coded on a computer than it is to pick through the indistinguishable gray-green tangles inside a formalin-embalmed cadaver. Because all of this can be done anywhere on any screen, students can study anatomy in this way in the library, in their apartments or, surely someday if not already, on their iPods and cellphones.

At the end of the academic year, there would be no need for old cadavers to be cremated, for new human donors to be found, for deep cleaning the anatomy lab. Come September, the whole system would simply reboot.

But what kind of doctors will they be, these students who have never experienced human dissection? They would have been denied a safe and more gradual initiation into the emotional strain that doctoring demands.

Someday, they'll need to keep their cool when a baby is lodged wrong in a mother's birth canal; when a bone breaks through a patient's skin; when someone's face is burned beyond recognition. Doctors do have normal reactions to these situations; the composure that we strive to keep under stressful circumstances is not innate. It has to be learned. The discomfort of taking a blade to a dead man's skin helps doctors-in-training figure out how to cope, without the risk of intruding on a live patient's feelings — or worse, his health. We learn to heal the living by first dismantling the dead.

The dissection of cadavers also gives young doctors an appreciation for the wonders of the human body in a way that no virtual image can match. It is awe-inspiring to hold a human heart in one's hands, to appreciate its fragility, intricacy and strength.

But most important, the cadavers on their stainless steel tables are symbols of altruism to medical students: They are reminders of how great a gift one can give to a stranger in the hopes of healing. Isn't that the most fundamental lesson we want our doctors to carry to the bedsides of their patients?

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