

Reviews and reflections

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Bones Books & Bell Jars: Photographs of the Mütter Museum Collection

Andrea Baldeck (AΩA, University of Pennsylvania, 1979)
Philadelphia, The College of Physicians of Philadelphia, 2012

Reviewed by Rhonda L. Soricelli, MD

In 1787, twenty-four prominent Philadelphia physicians, including Benjamin Rush, a signer of the Declaration of Independence, formed a private medical society whose goal was to “advance the science of medicine and lessen human misery.” Today, that society is The College of Physicians of Philadelphia, the oldest professional medical organization in the country. It is home to one of America’s most important Historical Medical Libraries



as well as the world-renowned Mütter Museum. Begun with donations from its founding members, the library houses more than 400 incunables (editions printed before 1501) and over 12,000 other rare books that helped lay the foundation of modern biomedicine. Among them are two copies of the 1543 edition of *De humani corporis fabrica* (*On the fabric of the human body*) by Andreas Vesalius. The Mütter Museum began from a small “cabinet of pathological specimens” collected from College Fellows in 1849 and was named for Dr. Thomas Dent Mütter in 1858 following the donation from his extensive private collection of 1,344 items—wet and dry preparations, wax models, plaster casts, and illustrations. Of course, over the years, the collections of library and museum have grown so that only a fraction of their holdings is on public display. Stacks and storage spaces throughout The College’s magnificent 1908 Beaux Arts building are a treasure trove of *materia medica*.

Among those treasures are more than three thousand historical medical photographs, 200 of which appeared in the handsome volume *Mütter Museum: Historical Medical Photographs* published by Blast Books in 2007 and edited by Laura Lindgren. An earlier book, *Mütter Museum of The College of Physicians of Philadelphia* (Blast Books, 2002) by then-curator Gretchen Worden presented an equally

fascinating array of old photographs interspersed with striking contemporary images of The College’s collections, many in vivid color, taken by fourteen prominent photographers including Rosamond Purcell, Joel-Peter Witkin, Max Aguilera-Hellweg, and Olivia Parker.

Passionate about photography since childhood, Andrea Baldeck retired from anesthesiology practice at the University of Pennsylvania in 1991 to focus on her photographic art. Her many published collections reveal the range of her interests and work: *Talismanic* (Hawkhurst, 1998), *Venice, a Personal View* (Hawkhurst, 1999), and from the University of Pennsylvania Museum of Archaeology and Anthropology *Touching the Mekong* (2003), *The Heart of Haiti* (2006), *Closely Observed* (2006), *Presence Passing* (2007), and *Himalaya: Land of Snow Lion* (2009). With *Bones Books & Bell Jars*, her first photographic essay related to medicine, Baldeck joins the remarkable tradition of medical photography at The College of Physicians. With the heart and training of a doctor and the eye of an artist, she creates photographs that speak as eloquently to students and practitioners of health care as they do to the general public.

In her book, Baldeck takes us on a personal journey of discovery through the stately College building that begins in the Historical Library. Here she iden-

tifies the texts she wishes to use as the foundational element for many of her photographs, carefully selected to capture each era in medicine. These range from fifteenth-century European herbals and anatomical treatises in Latin to eighteenth-century French dermatology texts and more. Then she delves into hidden spaces: the mobile storage area, Museum Storage Room No. 24, the Bone Room, Wet Specimen Room, and Skylight Storage to find skulls and skeletal parts, specimens, and medical instruments that will illuminate the texts or in other ways become part of her still life compositions. Throughout, Baldeck's narrative is beautifully written, a lyrical tribute, as are her more than 100 photographs, to the history, art, and science of medicine, to "the intimate contract of the doctor-patient relationship"^{p12} and to "what it is to be human."^{p94}

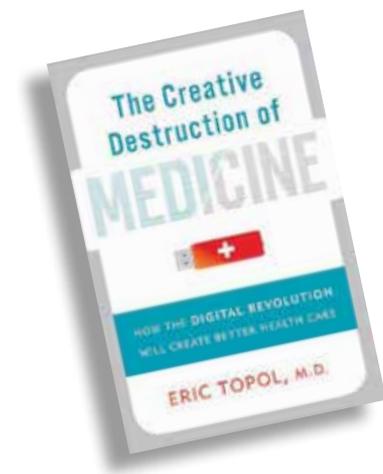
Baldeck uses black and white photography on film (silver-gelatin print) as her medium. In her view, black-and-white creates an abstraction from reality and facilitates greater emotional connection between viewer and subject than color photography can ever do—color in itself can be a distraction. Exquisitely lit with natural light, revealing a richness of tonality in shades from velvety black to the purest white, these are three-dimensional images that draw us in. The script and illustrations in rare books are as crisp as if we were looking at the original pages. One can almost feel the texture of the paper and smell the worn leather of old book bindings and well-used Gladstone bags. We want to grasp those gleaming metallic instruments and brush away the flakes of precipitate that cling to the preserved baby face of the Short-Limbed-Dwarf.^{p91}

Bones Books & Bell Jars is a magnificent volume to be savored in several sittings, revisited time and again, and shared with others. An exhibit of many of the photographs in this collection is on view at The College of Physicians through the end of December 2012. While the quality of printing in this

book is outstanding, nothing can compare with Dr. Baldeck's original works of art!

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The Creative Destruction of Medicine: How the Digital Revolution Will Create Better Health Care

Eric J. Topol, MD (A.O.A., University of Rochester, 1979)
Basic Books, New York, 2012, 303 pages

Reviewed by Dean Gianakos, MD, FACP

Along with hundreds of other internists from across the United States, I recently attended the American College of Physicians' Annual Leadership Day in Washington, DC. The purpose of the meeting was to update physicians on the significant health care problems facing our country and, more importantly, to mobilize physicians to advocate for

reform. Although I have practiced medicine for more than twenty-five years, this was the first time I had ever lobbied a congressman for anything. I felt it was finally time to share my medical experience and two cents with those in political office.

What I learned from the experience is old news: America's health care system needs a major overhaul. There are too many uninsured Americans. Quality of care is poor. Medical care is expensive, and inefficient. Payments to physicians are inequitable. Administrative waste is excessive. Defensive medicine is rampant and expensive. Electronic health records are expensive, underused, and not delivering on promises for improving quality and lowering costs.

In his book *The Creative Destruction of Medicine*, Eric Topol, MD, an eminent cardiologist and director of the Scripps Translational Science Institute in La Jolla, California, offers no explicit solutions to get us out of this mess, but his implied answer is this: more and faster adoption of new technology. Topol describes how information systems, increased computing power and data analysis, imaging technology, social networking, genomics, and wireless sensors will converge to form a new model of medicine:

Think of the cell phone . . . loaded for medicine, capable of displaying all of one's vital signs in real time, conducting laboratory analyses, sequencing parts of one's genome, or even acquiring ultrasound images of one's heart, abdomen, or unborn baby. This embodies a technological convergence, a coalescence of distinct and far-ranging functionalities, from elemental forms of communication to the complexities of medicine.^{pvii-viii}

Although Topol states "The intent of this book has *not* been to provide a techno-tour,"^{p228} that is primarily what he has provided: an amazing tour of a highly technical, individualized, digitized model

of medicine. His knowledge of medicine, genetics, and technology is vast. I learned much about new advances in genomics, the problems with population medicine, and the power of wireless body sensors. Topol feels strongly that these changes, what he calls the creative destruction of medicine—basically a radical transformation, not true “destruction”—must be led by consumers, because most physicians are reluctant and resistant to change their practice ways.

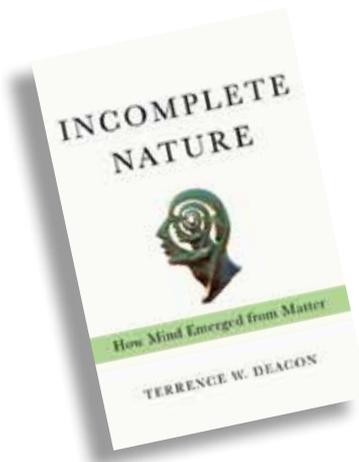
Topol spends little time addressing the well known problems with using new tools in medicine: Should we use them? When? By whom? Who pays for them? It’s hard to imagine inexpensive technology—at least when first introduced. He acknowledges other familiar problems: data overload, depersonalization, technology malfunction, data misinterpretation. Again, he offers no solutions.

To be fair, Topol is not interested in offering solutions to these problems and the ones I heard about in Washington. He is more interested in describing coming technological changes and innovations in medicine—and how the revolution must be sparked by empowered consumers.

I do not share Topol’s hyperenthusiasm for technology and innovation. Whether one talks about using simple blood tests or advanced technology such as MRI scans, wireless body sensors, and detailed genetic analyses, all of these are simply tools to help physicians better care for sick patients. Innovative technology will come and go, and certainly in many instances help patients. What will not disappear are vulnerable patients coming to trusted physicians to ask for help and compassionate care. I believe patients and physicians—more educated and informed, in part, because of technology—can figure out what’s right and good for patients. Protecting and encouraging that fundamental relationship matches or exceeds the importance of discovering the next wonder machine, and gives us important reasons to keep traveling to Capitol Hill.

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Incomplete Nature: How Mind Emerged from Matter

Terrence W. Deacon
New York/London, W. W. Norton, 2012, 602 pages

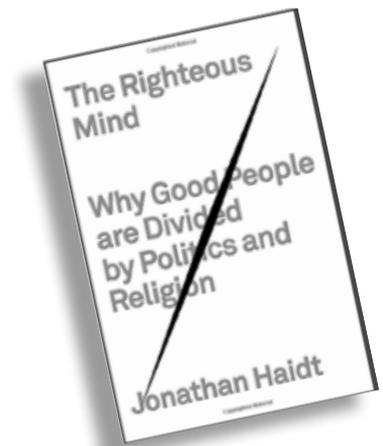
The Righteous Mind: Why Good People Are Divided by Politics and Religion

Jonathan Haidt
New York, Pantheon Books, 2012, 419 pages

Reviewed by Kurt Fiedler, MD

Within the past several years, the pertinent faculty committees of medical schools as diverse as the University of New Mexico and Harvard University have specifically rejected reorganizing their curricula to begin with instruction in what neuroscience now understands about the process of learning. Aside from demonstrating understandable doubt that successful med-

ical practice can be based on puzzling concepts like “emergent complexity,” they continue professional allegiance to the time-honored reductionist training in anatomy, physiology, biochemistry, etc. But merely adding some genetics and informatics to that list seems unlikely to expand basic science to sufficiently address the behavioral and social chasms that increasingly separate



individually based traditional medical practice from the broader expectations of the worldwide socially networked public.

The two books reviewed here present complementary detailed scholarly reviews of pertinent historical and current data, as well as cogent discussion of the evolution of knowledge and beliefs regarding two topics that could actually help reframe medical study and practice at either elementary or advanced levels. Terrence Deacon in *Incomplete Nature* describes how individual intentional behavior emerges from constraints inherent in the layered complexity of neuronal interactions in the human central nervous system. Jonathan Haidt in *The Righteous Mind* describes how socially based choices from one set of such constraints result in foundational divisions between groups of humans, for example, between political liberals and conservatives.

Incomplete Nature stems from Deacon's belief that the multiple cumulative failures to adequately explain such nonphysical events as mind, consciousness, and intentional behavior are due to the previous persistent efforts to define their origins in physical events, such as neuronal or neurohumoral circuitry. He takes his novel approach from the sixth-century Chinese philosopher Lao Tse:

Thirty spokes converge at the wheel's hub, to a hole that allows it to turn. Clay is shaped into a vessel, to enclose an emptiness that can be filled. Doors and windows are cut into walls, to provide access to their protection. Though we can only work with what is there, use comes from what is not there.^{p18}

Deacon argues that valid explanations of such immaterial concepts are defined by their fundamental *incompleteness*; that they "exist only in relation to something that they are not."^{p23} In contrast to an organ like a heart, or a molecule like hemoglobin, which inherit their functions from their ongoing involvement in the survival of an organism and—biologically speaking—have no teleological representation, these mentally conceived emergent intentional processes are explicit "teleodynamic" representations of the consequences they produce.

Deacon considers two emergent transitions at length: that from nonlife to life, and from insentient mechanism to mind. Unlike most previous commentators he does not consider such "emergence" to be something added that brings about organization; rather he regards organization as something that results from restrictions or constraints that are the actual immaterial emergent properties produced by the multileveled evolution of the nervous system. "The molecular interactions, propagating neuronal signals, and incessant energy metabolism . . . are necessary substrates; but it is because of

what these do not actualize, because of how their interactions are constrained, that there is agency, sentience, and valuation implicit in their patterns of interaction. We are what we are not: . . . necessarily incomplete."^{p535}

The admitted inspiration for *The Righteous Mind*, by Jonathan Haidt, comes from the nineteenth-century founder of sociology Emile Durkheim, who first pointed out the differing political solidarities that result in collectivistic versus individualistic societies. But Haidt's virtually unacknowledged mentor is Daniel Kahneman, who won the 2002 Nobel Prize in Economics for a career that documented the essentially immediate intuitive, rather than well-reasoned, basis of most people's decisions—whether confronted with economic or any other uncertainty. Kahneman showed that people construct explanations to rationalize their choices based on those intuitive socially derived moral foundational beliefs.

Haidt and his co-workers have empirically defined six discrete moral foundations, which they characterize by listing the positive and negative aspects of each trait: care/harm, fairness/cheating, loyalty/betrayal, authority/subversion, sanctity/degradation, and liberty/oppression. Socially defined choices as to which of these constraints are predominant among various groups explain "why good people are divided by politics and religion." It turns out that "Liberals," who of course are individualistic, emphasize care (for victims of oppression) and liberty, promote fairness moderately, and place relatively little value on loyalty, authority, or sanctity. In contrast, "Conservatives" value all six, but emphasize the foundations that "preserve a moral community," i.e., choosing loyalty, authority, and sanctity in preference to care, liberty, and fairness. Notably, such differences in attitudes are suggested to have a genetic basis from a human genome-wide analysis by Paul Hatemi and coworkers.¹

Haidt's data, and the number and definitions of the moral foundations themselves, are compiled from ongoing questionnaires (on-line at YourMorals.org); readers are invited to participate. Haidt wishes for a peaceful resolution of these foundational differences, but does not offer anything beyond wishful commonplaces (e.g., hoping for more egalitarian financing of elections). Apparently unless people indulge in "groupish" intoxication (by marching or dance or substances he ironically calls "Durkheimogens"), the saddest consequence of the realization that socially defined beliefs take precedence over rational knowledge is admitting that reason is unlikely to ever prevail.

Stylistically these monographs are very different. Deacon is reserved, prolix, and unashamed to offer well-defined neologisms, and is often intentionally repetitive in an effort to help readers recall the embedded sources of the most recent postulate in his multilayered argument. Haidt is ostensibly more self-revealing and colloquial, although often unashamedly contrived—more than once he pats himself on the back for having chosen a long way around to more effectively persuade the reader. Both are convincingly erudite, and arguably professionally selective in their chosen domains and references. Both present new and challenging concepts whose implications extend well beyond neuroscience. And both books, while demanding, are well worth the time and attention of clinicians and teachers of medicine.

Reference

1. Hatemi PK, Gillespie NA, Eaves, LJ, et al. A genome-wide analysis of liberal and conservative political attitudes. *J Politics* 2011; 73: 271–85.

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