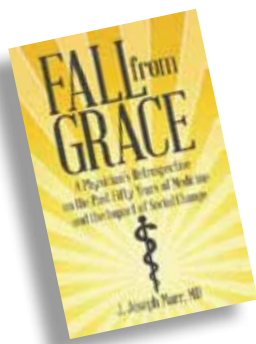


# Reviews and reflections

David A. Bennahum, MD, and Jack Coulehan, MD, Book Review Editors

The book review editors request that books for potential review be approved by the editors before the reviews are written. Reader interest and space are always considerations in this section and unsolicited reviews may be rejected. Contact Dr. Bennahum at [dbennahum@salud.unm.edu](mailto:dbennahum@salud.unm.edu) and Dr. Coulehan at [john.coulehan@stonybrookmedicine.edu](mailto:john.coulehan@stonybrookmedicine.edu).



## Fall from Grace: A Physician's Retrospective on the Past Fifty Years of Medicine and the Impact of Social Change

J. Joseph Marr, MD  
iUniverse, Bloomington, Indiana, 2015

Reviewed by Norman H. Edelman,  
MD (AQA, New York University, 1961)

What do doctors really want? . . . It's the autonomy, stupid.

Dr. Marr's monograph, *Fall from Grace*, is a passionate lament of the awful state he believes medicine has fallen into over the past half century. Certainly he is not alone. We all have colleagues, mostly senior, who decry our current state of affairs and advise their progeny to stay away from the profession. But what, exactly, is the problem? Physicians continue to earn among the top few percent of society. Our work hours are generally less than they used to be. This, in part, is one of the many benefits of our overdue inclusion of women in our ranks. We may not be revered anymore, but we certainly

remain a respected profession—and for the most part we still have the satisfaction of helping people in need. Dr. Marr thinks that the cause of the dysphoria is the destruction of the doctor-patient relationship, but he devotes almost no space

to the patient experience. I think he is really lamenting the diminution of physicians' autonomy. This, of course, is no small matter. Those who study professions point out that autonomy, both of the profession as an entity and of individuals in it, is the main goal of most organized professions, and that a high degree of autonomy is the hallmark of the most successful ones. Physicians have long succeeded in garnering substantial autonomy. Indeed, one can read the original Hippocratic Oath as a social contract to that end. First we point out that our legitimacy comes from the gods, not man. Then we say quite clearly that we intend to run our own show, carefully guarding the precious knowledge base, parsimoniously passing it on, and making our own rules of conduct. In return, we assure the public that we will do our best to heal them and refrain from unethical conduct.

The forces that Dr. Marr believes have led to the diminution of our autonomy (or as he would say, impairment of the doctor-patient relationship) are several. Most prominent is the profit motive. He blames for-profit providers and payers for getting between our patients and us. Also prominent on his list are technological advances such as the electronic medical record, the tort system, DRGs, RVUs, and independent nurse practitioners. Physicians are held harmless for their pursuit of high incomes, as he claims that their payments come to less than ten percent of the total cost of health care and therefore are not responsible for the high cost of the system.

There is much in this monograph that I take issue with. Let's begin with facts. According to the federal government, physician costs accounted for seventeen percent of the total cost of health care in 2013.<sup>1</sup> An analysis by health economists suggests that a substantial portion of the difference between health care costs in the United States and several of the wealthier European countries is due to relatively higher physician payments in the United States, most notably to specialists.<sup>2</sup> The broad-based lambasting of for-profit entities seems a bit simplistic to me, as it implies that not-for-profits do not have similar concerns about efficacy, efficiency, and the bottom line, and thus they do not intrude in the individual practice of medicine. That's not been my experience. In addition, with regard to providers, only eighteen percent of hospitals are for-profit,<sup>3</sup> hardly a major force. The reality is that health care in the United States is an almost three trillion dollar enterprise, with federal and state taxes footing about half the bill. Physicians do not receive the bulk of the funds, but we do drive expenditures. Thus, our tax-averse society is unlikely to leave us to our own devices.

Dr. Marr's treatment of non-physician clinicians highlights his concern about physicians' loss of control. He liberally praises physician assistants, but is rather cool to nurse practitioners. The difference, of course, is that the PAs are happy to accept direct physician supervision, but NPs have sought to be independent practitioners in the delivery of primary care. Dr. Marr cites this as evidence of inferior care being provided to patients. But there is no evidence for this assertion. Many studies, including a controlled trial,<sup>4</sup> have shown that NP and physician care are equivalent in outcomes and patient satisfaction with one exception: the NPs spend twenty-five percent more time with each patient.

When I was three-quarters through the monograph I was not feeling very enthusiastic about it. However, the last chapter substantially improved my opinion. In it, Dr. Marr makes three

important points. First, he accepts the fact that many of the forces changing medical practice are not peculiar to the profession, but manifestations of our changing society as a whole. One example is the explosion of technology, which when used in medical diagnosis tends to come between patient and doctor. Next, and more important, he validates the title of his work. Every definition of “fall from grace” I have found includes culpability of the fallen. Thus, he admits that the medical profession may have brought some of these changes upon itself. To me it’s more than *some*. Had U.S. physicians endorsed a single-payer system when physicians in most other wealthy countries were doing so, there would be no for-profit payers. If organized medicine had not supported a *de facto* freeze on the production of MDs for twenty-five years and the initiation of the still-operative freeze on federal support for GME, the market forces that caused proliferation of non-physician clinicians would have been substantially less strong.

Finally, and most importantly, Dr. Marr urges physicians, singly and through their organizations, to take action to regain the respect and confidence of the public which he sees as greatly diminished. He makes no specific suggestions—but I have one. It is time to say to our society that we value and accept the legitimacy of its input in the governance of our profession. One way to start would be to recognize that specialty mix and relative compensation between specialties is a valid public concern, and invite meaningful participation by representatives of the public in the bodies convened by our professional societies that play key roles in their determination: the Accreditation Council for Graduate Medical Education (ACGME) and the AMA/Specialty Society Relative Value Scale Update Committee (RUC).

My bottom line: I suggest you read this monograph. If you agree with Dr. Marr you will enjoy the passionate presentation of his views. If you disagree, his opinionated style will allow you to

enjoy criticizing it. In either case, it is likely to be thought provoking and thus worth your while.

### References

1. Centers for Medicare & Medicaid Services. National Health Expenditure Data. available at: <http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/index.html>.
2. Laugesen MJ, Glied SA. Higher fees paid to US physicians drive higher spending for physician services compared to other countries. *Health Aff (Millwood)* 2011; 30 (9): 1647–56.
3. American Hospital Association. Fast Facts on US Hospitals. <http://www.aha.org/research/rc/stat-studies/fast-facts.shtml>.
4. Munding MO, Kane RL. Health outcomes among patients treated by nurse practitioners or physicians. *JAMA* 2000; 283 (19): 2521–24.

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### Behold Our Moral Body: Psychiatry, Duns Scotus, and Neuroscience

Sally K. Severino, MD (AQA, University of New Mexico, 1997)  
London, Versita, 2013, 137 pages.

Reviewed by Timothy Graham, PhD, FRHistSoc

This book seeks to bring together the insights of present-day science and medieval philosophy to explain the foundations of human moral behavior. The author is a retired academic psychiatrist who was the first female president of the American College of Psychoanalysts; she



is also an associate of the Felician Sisters, affiliates of the Franciscan order within Roman Catholicism. The seven chapters of the book introduce key recent discoveries from behavioral science, psychiatry, and neurology, comparing these discoveries with concepts central to the moral philosophy of John Duns Scotus (ca. 1266–1308), a Franciscan priest who taught in the universities of Oxford and Paris before spending the final year of his life as an instructor in the Franciscan college at Cologne. Known in his own time as “the Subtle Doctor” and described by Victorian poet Gerard Manley Hopkins as “of realty the rarest-veined unraveller,” Duns Scotus made a critical contribution to the understanding of the nature of human moral choice, going significantly beyond the thinking of his great predecessor, Thomas Aquinas. The goal of Severino’s book is to argue that contemporary science is showing us “how the human body facilitates the moral behavior that earlier religious foresights describe.”<sup>p18</sup>

Central to her thesis are scientific findings that, in combination, present a powerful case for the human body being “prewired” to act in a moral fashion. Behavioral science, for example, has developed Attachment Theory to explain the early social and emotional development of humans. Relationships growing from attachments configure the nervous system in ways that coordinate our moral nature, while the science also demonstrates that there is an underlying predisposition for children to awaken specific moral propensities at fixed points within their development (chapter 2). Since the mid-1990s, neuroscience has demonstrated the existence of mirror neurons, located in specific anatomical

areas of the brain, that enable us to perceive and imitate others' feelings and behaviors. Von Economo neurons, which awaken after birth and reach their peak at age four, allow humans to perceive how another's mind will work in a particular situation; they facilitate empathetic response and intersubjective relationships (chapter 3). Human desire may be either self-centered, intended to benefit the individual subject, or directed toward the larger good; in the first case, it is mediated by the older dorsal vagal system, which responds to life threat and is present also in reptiles, but in the latter case it is associated with the newer ventral vagal system, which responds to social cues and is specific to mammals, and with the release of the hormone oxytocin, which is associated with loving bonding (chapter 4). The experiments of Benjamin Libet in the 1980s and 1990s, conducted with electrodes applied to the skulls of his human subjects, established the contribution of nonconscious embodied processes to decision-making, thereby linking human free will to neurology. More recently (in 2010), behavioral neurologist Antonio Damasio has shown that those processes are not fixed but can be educated: the "educated cognitive unconscious" enables humans, through repeated practice, to make moral actions second nature. Neuroscience has also demonstrated that emotional awareness—particularly empathy, the ability to experience another's state as if it were one's own—together with rational evaluation, contributes to decisions of the will; physiologically, emotional awareness has been tied to the frontal lobes of the brain (chapter 5). Unameliorated stress, associated physiologically with the massive release of the hormones adrenaline and cortisol, and mediated via signals from the amygdala, contributes to poor decision-making and may lead to poor moral choices through its disruption of the innate urge to connect with others (chapter 6).

In each of her chapters, Severino explores how the scientific discoveries she presents are related to issues of the human condition implicit in the

creation story of the book of Genesis and how they are adumbrated in the philosophical discernments of Duns Scotus: as she puts it, Scotus "intuitively accessed truths that science is currently rediscovering."<sup>p38</sup> Scotus surpassed his predecessors and contemporaries in his exploration of free will, moral choice, and the means by which humans acquire knowledge. He emphasized that love, in addition to intellect, is vital for moral conduct, that moral living rests upon relationship as well as upon obligation. His theory of cognition identified two cognitive acts: abstraction, whereby the intellect forms mental concepts based upon sense perceptions, and intuition, which is not dependent upon the senses but provides direct awareness of the existence of an object. For Severino, these correspond to the neuroanatomical means by which humans understand the actions and emotions of their fellow humans; the immediate, nonconscious knowing of Scotus's intuition parallels the non-conscious cognitive mechanisms that are underpinned by the autonomic nervous system. Perhaps Scotus's best-known formulation is his distinction of desire into what he called  *affectio com- modi* (inclination toward/love of that which is useful to the subject) and  *affectio iustitiae* (inclination toward/love of justice or that which will benefit the larger whole—though Severino misleadingly translates the phrase as "desire to love justly"<sup>p53</sup>). This distinction enabled Scotus to explore how humans can select between multiple options at the moment of choice and correlates well with the scientific distinction between the activity of the dorsal and the ventral vagal systems. Scotus also perceived that nonconscious as well as conscious processes entered into human choice and that the ability to choose rightly can become second nature; his thinking here foreshadows neuroscientific perceptions of the educable nonconscious embodied processes that promote intersubjectivity. Severino's conclusion is that Scotus's insights parallel the discoveries of psychology and neuroscience by presenting a basis for "a

morality of compassion, interconnectedness, global empathy and valuing . . . a morality of intersubjectivity."<sup>p101</sup>

Severino acknowledges at the beginning of her book that she is not a Scotus scholar and must depend upon modern English translations and interpretations of his Latin treatises. Nevertheless, she has identified the critical elements in his moral thinking, and her juxtaposition of his insights with recent scientific discoveries is arresting. She notes that her book "brings together what the Scientific Revolution and the Age of Reason never should have separated: the disciplines of science and the intuitions of religion."<sup>p18</sup> Her investigation of the parallels between these two worlds produces a thought-provoking work that repays a careful reading.

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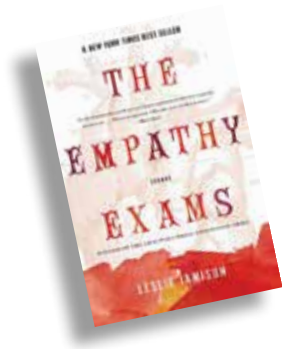
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## The Empathy Exams

Leslie Jamison  
Graywolf Press, Minneapolis, Minnesota,  
2014

Reviewed by Jack Coulehan, MD,  
MPH (AQA, University of Pittsburgh,  
1969)

Toward the end of the title essay in *The Empathy Exams*, Leslie Jamison writes, "Empathy isn't something that just happens to us—a meteor shower of synapses firing across the brain—it's also a choice we make: to pay attention, to extend ourselves."<sup>p23</sup> Empathy is a skill. It takes work. The author is reflecting on her experience as a medical actor, or



standardized patient. In the essay she presents a typical patient case description for a psychiatry module, a young woman whose “seizures” developed shortly after her brother had drowned a year earlier. Jamison, the actor, “became” this patient being interviewed by a medical student. Afterward, she would score the interaction using a checklist that included items like, “Voiced empathy for my situation/problem.” Thus, the exercise was concerned not only with eliciting bits of medical information, but also with the student’s affective and interpersonal skills; in other words, an empathy exam.

The author reflects, in particular, on the performative or verbal aspects of empathy in this context. “It’s not enough for someone to have a sympathetic manner or use a caring tone,” she writes.<sup>p3</sup> In fact, students received a higher score if they responded verbally to the patient’s affect, and said the right words, in addition to appearing attentive and concerned. Jamison’s entire collection of essays might be conceived as a successful attempt to respond verbally to the reader, to express her own growth in empathic understanding through a wide array of life experiences.

“Devil’s Bait,” another essay, describes the author’s interviews of a number of patients self-diagnosed with Morgellons disease, a poorly understood condition in which sufferers report that thread-like fibers emerge from lesions in their skin. These patients experience persistent sensations of crawling and stinging, leading them to believe they are infected with parasites. Medical evaluation reveals no evidence of infestation, although patients may have some nonspecific dermatitis or self-induced skin damage. The “threads” usually consist of cotton fibers or other common materials. Most physicians

consider Morgellons disease a “delusional parasitosis.” Jamison interviewed several attendees at a patient-organized Morgellons conference and, though she doubted their self-diagnoses, she had no doubts about their reality of the pain and suffering.

The author makes two particularly pertinent points about her experience at the conference. First, the impact of hearing personal stories is often more compelling than knowing the facts. One day, after taking a shower, she begins to feel crawly sensations around her neck and notice bits of debris on her skin. At the same time, she is quite aware that she doesn’t have an infestation. I think most of us have experienced this sort of “sensory contagion” at one time or another in our lives. This is especially true of medical students learning about diseases for the first time. Secondly, the author wonders about the possible negative effects of developing too much empathy. With regard to Morgellons support groups and conferences, she asks, “When does empathy actually reinforce the pain it wants to console?”<sup>p54</sup> I think in this case Jamison confuses empathy (i.e., attempting to understand another’s emotional experience) with identification (i.e., identifying with another’s experience, including their belief system). Only the former is therapeutic.

In another place Jamison writes, “. . . empathy is always perched precariously between gift and invasion.”<sup>p5</sup> This is an elegant, but somewhat misleading, statement. Certainly empathy is a gift, in the sense of being a great benefit. It’s what makes friendship, love, and compassion possible. However, as the author herself states, empathy requires attention and effort; it doesn’t drop from the blue. The “invasion” part also has the potential to mislead. Yes, if I attempted to deeply empathize with each casual acquaintance, I’d become unpopular very quickly. However, in the medical context, empathic “invasion” is an important tool for achieving accurate diagnosis and therapy.

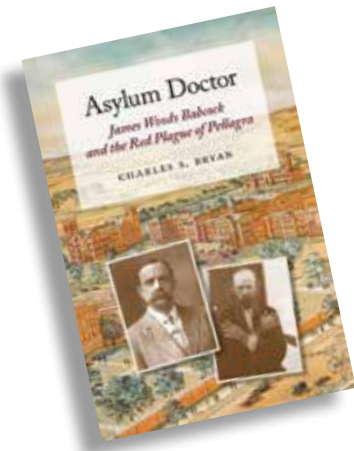
In a long essay entitled “Grand Unified Theory of Female Pain,” Jamison

presents an array of thirteen “wounds” suffered by women. She acknowledges Susan Sontag’s critique of metaphor: by turning “the wounded woman into a kind of goddess, romanticized her illness and idealized her suffering,”<sup>p187</sup> our society normalizes female pain. It’s to be expected. Sometimes admired. Sometimes trivialized. She cites a 2001 study in which men who reported pain were more likely to receive strong analgesics than were women. Women, however, were more likely to receive sedatives, as if they were exaggerating or dramatizing their pain because of anxiety. Among the thirteen “wounds” Jamison discusses in her “Grand Unified Theory” are anorexia, obsession, self-mutilation, rape, and psychological assault, along with other conflicts and invasions. Each vignette brings her (and the reader) close to the subject’s experience, her coping and conceptualization of the pain.

Those of us interested in teaching literature to medical students often make the claim that careful reading of poetry, novels, short stories, and personal essays can help the student develop a deeper understanding of others and, hence, improve their ability to empathize with patients. *The Empathy Exams* offers an excellent example of this process. Beginning in the artificial, but safe, environment of a standardized patient program, the reader sits on Leslie Jamison’s shoulder as, episode by episode, she deepens her understanding of herself and others. Meanwhile, readers, too, broaden their own life experience by connecting with the diverse and vulnerable characters they encounter. The bottom line: empathy is “a choice we make: to pay attention, to extend ourselves.”<sup>p23</sup>

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### **Asylum Doctor: James Wood Babcock and the Red Plague of Pellagra**

Charles Bryan, MD (AQA, University of South Carolina, 1992)  
The University of South Carolina Press,  
Columbia, South Carolina, 2014

**Reviewed by Robert H. Glew, PhD**

This informative and interesting book by the physician and medical historian Charles Bryan is mainly about pellagra in South Carolina in the pre-Goldberger era. *Asylum Doctor: James Woods Babcock and the Red Plague of Pellagra* is a detective story of sorts from which biomedical scholars and educators, and current public health students in particular, can derive both pleasure and scholarly insights regarding epidemiology and the snares of prejudice and research bias. The first eighty pages inform the reader about the development of the asylum movement for the mentally ill and the birth pangs of psychiatry in the United States. Ironically, especially in light of the fact that “asylum” is synonymous with “sanctuary,” the asylum in Columbia was the antithesis of a place of refuge.

The protagonist of this extensively documented, well-written, and thoughtfully organized book is Dr. James Wood Babcock, first superintendent of the South Carolina Asylum for the Insane. However, the central arc of the story follows not the life of a man but the zigzag course that led to the discovery that niacin deficiency was the cause of pellagra.

In the last decades of the nineteenth century pellagra had reached epidemic

proportions in the Deep South. By the early 1900s, 7,000 pellagra deaths per year were being reported in the fifteen Southern states. Its increasing incidence was first recognized in state-run mental asylums and in rural areas. Why? Because that is where conditions were ripe for the emergence of pellagra: namely, poverty and a monotonous diet centered on corn but low in animal protein. While the governor and legislature of South Carolina had the wisdom to build the asylum in Columbia, the prevailing political climate at the time hewed to a philosophy of small government, low taxes, and bare-bones support for the poor and disabled or handicapped. One of the consequences of such a value system for patients at the asylum supervised by Dr. Babcock was a corn-based diet that contained little in the way of meat, dairy products, or vegetables that might have provided protein. One of the amino acids in proteins essential for health is tryptophan, which the body can metabolize to niacin; 1 mg of niacin can be derived from 60 mg of tryptophan.

At the time Babcock was documenting cases of pellagra, there were four main hypotheses regarding its cause. In 1810 Giovanni Battista Marzari speculated that a poverty-imposed monotonous corn diet lacked something necessary for good health and that pellagra might be a deficiency disease. Unfortunately, though Marzari was right on the mark, 130 years would pass before he was proven correct. At the turn of the twentieth century, two other paradigms dominated the pellagra field: the “spoiled corn” hypothesis and the gnat-borne parasite hypothesis. According to the spoiled corn hypothesis, improperly processed or stored corn permitted the growth of one or more pathogenic microorganisms or the production of toxins by a fungus. A strong proponent of the spoiled corn hypothesis was William Osler, one of the four founding fathers of the Johns Hopkins School of Medicine. The gnat hypothesis, tenaciously promoted by

the British scientist Louis Sambon, posited that a Simulium fly transmitted a pellagra-causing infectious agent, probably a parasite. The consistent observation by many investigators that fever was not associated with pellagra and that the disease was not communicable eventually disproved Professor Sambon’s theory.

In a sense, Marzari’s idea can be considered the “poverty” hypothesis: that is, pellagra was the result of preventable sociological circumstances associated with poverty—address the problem of poverty and provide the poor with a generous and varied diet and you eliminate pellagra. It is arguable that those who advocated for the spoiled corn or infectious disease hypothesis, politicians in particular, did so because to admit that government and civic society were insensitive to the poor would bring shame and humiliation on the state. In their eyes, pellagra wasn’t a human failure; that is, it was not the result of inadequate funding of the mental asylum or insensitivity to inhabitants of rural areas but, instead, to nasty microbes in spoiled corn.

Although Dr. Babcock did not solve the pellagra problem, he did make significant discoveries and publish thoughtful and useful findings. He is widely recognized and respected for having established the National Association for the Study of Pellagra, which kept the scourge of pellagra in the public’s eye and promoted the search for its cause. He also convened numerous national and international conferences on the disease. Most significantly, he demonstrated that a varied diet could cure pellagra. On the clinical side, Babcock is credited with improving the treatment of black patients with pellagra.

The last third of *Asylum Doctor* is devoted to the scientifically rigorous, laboratory-centered search for the cause of pellagra, focused mainly on the careful and systematic studies of Dr. Joseph Goldberger, a physician in the U.S. Public Health Service. While it was through rigorous application of

the elements of the inductive method articulated by Francis Bacon in the early seventeenth century—namely observation, hypothesis, experimentation, and data analysis—that allowed Goldberger to prove that pellagra was caused by niacin deficiency, the contributions of other investigators were required to fully clarify the centuries-old mystery of this deficiency disorder. Notable among these is Conrad Elvehjem, a biochemist at the University of Wisconsin, who isolated and characterized the structure of niacin, established a pellagra model in dogs, and demonstrated that purified niacin (nicotinic acid) from brewer's yeast cured pellagra. Noteworthy, too,

is Sir Frederick Gowland Hopkins at Cambridge University, who isolated tryptophan from protein. It was subsequently shown that humans could metabolize tryptophan to niacin, thereby satisfying much of a human's niacin requirement.

Dr. Bryan has done a masterful job of interweaving the saga of the conquest of pellagra with the fascinating and admirable biography of James Charles Babcock, who weathered twenty-five stormy years of caring for patients with pellagra at the state mental asylum in South Carolina, while passionately and relentlessly supporting and encouraging other physicians and scientists in their

search for the cause and treatment of the red plague of pellagra. But the story isn't complete. Questions remain for today's young scientists in the health professions to contemplate: for example, why was pellagra much more prevalent in women?

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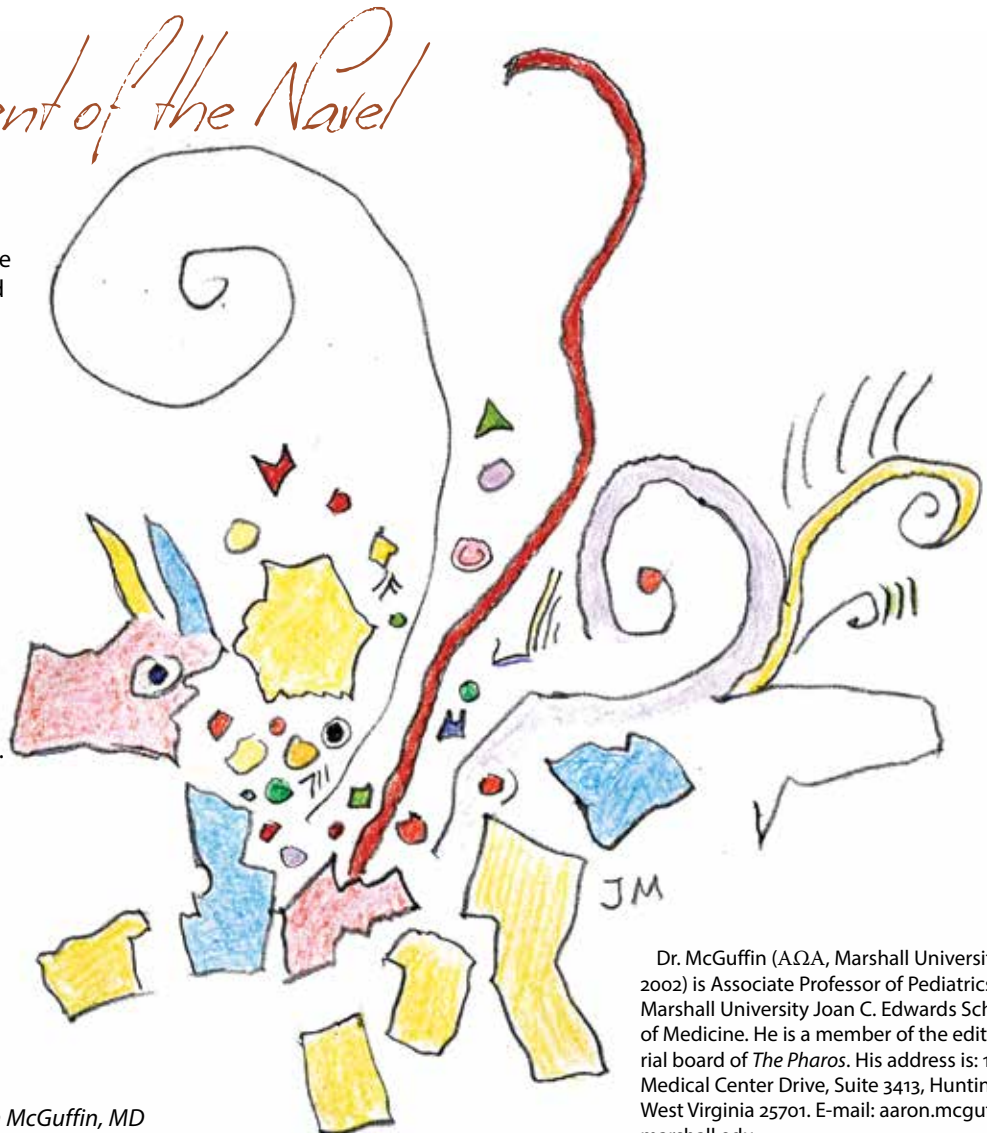
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## The Lament of the Navel

In my heyday  
I was the linchpin of life,  
a three vessel thoroughfare  
role-playing the command  
for go forth and multiply.  
The ebb-and-flow  
of a divine miracle,  
the oxygen lorry  
for a living being.  
Until that final day.  
My incubation,  
triumphantly  
poured out  
like a priceless piñata  
precipitated into daylight.  
The blinding snip  
of surgical shears  
as we separate.  
Cold clamps of conclusion.  
Lack of acknowledgment.  
Humiliation worsened  
by days of dangle,  
the center of attention.  
Everyone waiting  
for me to fall off  
so that it is finished;  
a blind pouch  
of disgrace;  
life-giver to  
lint trap.

Aaron McGuffin, MD



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