

Art in Science: Quackery and Promises Not Kept

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The uncertainties of illness and the mysteries of death, coupled with the instinct and the passion to survive, create a natural human vulnerability in which patients tend to believe what is comforting and hopeful.

Enter the charlatan. With selfish motivation and outright intent to

deceive, these loathsome individuals claim to possess the skills, knowledge, or medicines that medical experts don't—to the detriment of their believers [6]. This longstanding pattern of fraudulence, of trickery, of prey is commonly referred to in the Western world as “quackery” [10, 13]. The term “quack” reflects the Medieval practice of shouting out one's wares in the marketplace; the Dutch term quack-salver (*kwakzalver*) literally means the hawk of salves [4].

Historically, the most widespread major vulnerabilities in health were often forms of infectious diseases, particularly the plague and venereal diseases. But there are also the common and mundane daily pains such as headaches, diarrhea or constipation, toothaches, menstrual irregularities, and painful joints that leave the afflicted searching for solutions [5, 10]. Proposed “cures” were bounded only by imagination and gullibility, including ingestion of mud, blood, and body parts (animal and human); the use of hot irons; or the burning of varied ingredients and potions (“patented” medicines) appearing over centuries [7]. More recently, some of these strategies have fallen under the rubric

of alternative medicine [2], spanning the promotion of fruit pit extracts (laetrile) for cancer and acupuncture for pain relief [8].

A few drugs used by quacks actually had some merit. Mercury, for example, had antisyphilitic properties, but also safety risks including untested purities, doses, and dosing [8]. Purple foxglove (digitalis), opium poppy (morphine), and cinchona bark (quinine) were also used for their anecdotal success. Physicians of the past, undoubtedly with regret, often had neither the knowledge nor the tools required to enhance both the safety and efficacy of their available pharmacy. Quacks, on the other hand, had no desire to improve their products. Their interest was in using deceit to sell their wares. Herein lies a clear distinction between a medical practitioner's acknowledged state of limited scientific information and a quack's practiced fraudulence. The blind faith of desperate patients is understandable, as they may not be able to distinguish between the agendas of well-intended physicians and duplicitous quacks.

Contemporaneous imagery of this tension between forgivable desperation and punishable medical fraud has been provided repeatedly in art, certainly back to the Middle Ages. A detail of *De Kwakzalver* (Fig. 1), attributed to Jan Steen (1626-1679) [3], demonstrates many of the elements that characterized the quack, one of several renditions by the artist depicting a charlatan among peasants

A note from the Editor-in-Chief: I am pleased to present the next installment of “Art in Science,” team-written by Gary Friedlaender and Linda Friedlaender. Gary is the Wayne O. Southwick Professor and Chair Emeritus for the Department of Orthopaedics and Rehabilitation at Yale School of Medicine; Linda is the Head of Education at the Yale Center for British Art. Together, they will share observations from a fascinating vantage point: the intersection of art and medicine. We welcome reader feedback on all of our columns and articles; please send your comments to eic@clinorthop.org.

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Fig. 1. *De Kwakzalver (The Quack)*, Jan Steen, 1679, oil on panel, Rijksmuseum, Amsterdam, The Netherlands.

attending a local fair. In the center of the scene is the well-dressed and seemingly successful vendor, a gleam in his eye as he transfixes the elderly, less well-appointed gentleman with his left arm in a sling and a cane in his right hand. With a smirk on his face, if not an outright devious contenance, he's reaching out to his customer with something in hand, while a woman accompanying the infirmed gentleman appears to be counting out the cost of the proposed cure. The makeshift table in the center foreground contains the ingredients, mortar and pestle, and other accoutrements to make the potions and add legitimacy to the craft. Onlookers variously focus on the object proffered and the face of the sufferer, who is either in awe, with hope, or skeptical. Either way, we can observe that the vendor's activity has

clearly drawn a crowd. In the left foreground, a child holding a rim and stick—likely a play object—stares at what looks like a credential posted on the wall. The overly ornate “diploma,” drawing only the attention of a child, seems to suggest a ridiculous and less-than-authentic basis for this transaction. The dispensary also appears easy to dismantle for a quick exit to another fair, before the lack of truth and efficacy is discovered, the sine qua non of quackery. It was clearly the artist's intent to portray the quack in an unfavorable light. Perhaps this type of art served as a teaching moment for suffering and gullible individuals, with too little education to separate a quack, selling hope in a pill or bottle, from a trustworthy and trained practitioner.

Similar commentary, indeed, satire, is provided by William Hogarth in

Marriage a-la-mode, a set of six paintings that were later made into engravings [11, 14]. The third painting in the set, *The Inspection or The Visit to the Quack Doctor* (Fig. 2), takes place in the house or office of Dr. Misaubin, in Westminster, London. Dr. Misaubin is particularly well-known for his pills. The background is littered with symbols of science and anatomy, including a ridiculous, embalmed corpse in the closet. The doctor is standing to our left and is confronted by a gentleman (Viscount Squanderfield), who is extending his right hand with a small object (a pill or pill box) and his left hand bears a raised cane, presumably in threat or anger. One explanation of this encounter is that the doctor was consulted to examine and treat the young woman on the right, in preparation for sexual liaisons. The doctor's examination and his special pills were to assure the woman's health, a promise not kept. The woman between the two men arranged the ill-fated relationship, and she is similarly being held accountable. Another story-line suggests that the gentleman had liaisons with both women, who were purported to be under the medicinal care of the doctor, and he now wants an explanation as to which woman infected him and why this was not prevented by the touted medication. Clues of the nature of this confrontation include the skull on the table demonstrating perforations seen in advanced syphilis, the black spots connoting syphilis on the face of the madam and neck of Squanderfield (and perhaps on the doctor himself), the placement of the young girl between the legs of Squanderfield, and her holding a handkerchief to a lesion on her lip. In either case, the doctor's skills in physical examination and the efficacy of his pills are lacking and the case for quackery is sustained [9].

In the century following the establishment of the FDA in 1906, one might

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Fig. 2. *Marriage à-la-mode: The Visit to the Quack Doctor*, William Hogarth, 1743, The National Gallery, London, England

think that quackery has been abolished [1]. Although much of traditional medicine still lacks the rigors of evidence-based efficacy and safety, there is, nonetheless, a general acceptance of the need to continue seeking proof of a treatment's worthiness [12]. This is in contrast to the realm of alternative or complementary medicines, where proponents often argue there is no need for proof beyond the anecdotal claims. This confuses a public desperate to find answers to their fears and illnesses that are perhaps easier to tolerate than, for example, properly vetted chemotherapy. While many alternative medicines currently advertised and those hawked in centuries past are harmless, some are not. In addition to the potential toxicity of unproven therapies, there is also danger when quackery interferes with pursuing effective treatments for very threatening

health issues [8]. Ingesting bleach to cure COVID-19 is a current example.

The use of an approved drug for an unproven purpose can be similarly risky. Suggesting the use of hydroxychloroquine or Ivermectin to treat or prevent COVID-19 infection is either out of ignorance or deceit. For these reasons, we must continue our commitment to seek in reputable and peer-reviewed forums the evidence that makes quackery a matter of history.

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