Historical Perspectives on the Antaean Animadversion of Vaccine Science in the 21st Century

Donald E. Greydanus*

Department of Pediatric & Adolescent Medicine, Western Michigan University School of Medicine, 1000 Oakland Drive D48G, Kalamazoo, MI 49008-1284, USA

Abstract

Anti-vaccine sentiment has been present since the concept of immunization was first introduced by Edward Jenner in the fin de siècle decade of the 18th century in England. This paper considers historical perspectives surrounding contravening and injurious views toward vaccinations. Clinicians and scientists are often perplexed by how seemingly intelligent and caring parents can conclude that scientifically-validated vaccines are dangerous to their children, prompting such parents to refuse to provide some or even all of the vaccines recommended by major organizations in medicine around the world. The pungent philippic of the anti-vaccine community can seem disingenuous and desipient to the science community; unfortunately, this antipodal diatribe is often positively perceived by some members of the public and has been for countless eons. Anti-vaccine animus is not a fugacious movement of lilliputian dimensions but an antaean, amaranthine straw man fallacy with deep roots buried in the zeitgeist of Homo sapiens that has and will cause tragic harm to helpless children from what are vaccine preventable diseases. Appreciation of such concepts can be useful in constructing strategies to improve this 21st century vaccine animadversion. One can accurately adumbrate that failing to effectively address such issues will only lead to more vaccine refusals despite the persistent and impressive progress that is being made in vaccinology. Modern science does not have a nepenthe for the parents who have needlessly lost children because these precious little ones were not vaccinated for a vaccine preventable disease. The silence of the anti-vaccine mantics and maudits in such cases is deafening and pantagruelian.

Keywords: History; Anti-vaccine movement; Media effects; Autism

Introduction

It was over 80 millennia ago that Homo sapiens first emerged from over 300,000 years of hominoid evolution. Born into an unforgiving and mysterious world, humans struggled to deal with sickness and disability [1,2]. They learned to mourn their dead as noted by evidence that Neanderthals of 70,000 years ago carefully buried their loved ones, even those with deformities from rickets [3]. They learned to deal with disease and death in their lives and that there was little one could do to prevent what was felt to be “inevitable”. Humans developed various theories to help them cope which included the emergence of a wide variety of religions, exotic euhemerism, concepts of mysticism, and magisterial mantics. Early healers and ancient thaumaturges were often based in religion or magic and early humans learned to not trust these individuals, for their work did not seem to heal the ill or deformed. Humans developed a mistrust of “healers” from the earliest time since their advice rarely helped, except with serendipity. Thus, mistrust of advice from medical professionals is a time-honored human tradition. Some cultures even punished so-called “healers” if their recommendations proven ineffective or harmful.

There has also been considerable apotropaic prejudice against the ill and deformed that arose thousands of years ago. Food was scarce and was too precious to be shared with the non-contributing and fainéant disabled humans. Agriculture was not discovered until 10,000 years ago and food was reserved for the healthy and not the sick. One writer in ancient China during the Zhou Dynasty (841BC to 221BC) called mentally retarded children “stupid—born stupid and fearful” [4]. People in Western cultures were fearful and distrustful of those with mental retardation and etiology of epilepsy was given sacerdotal explanations such as being due to demon-possession [5].

If one were unhealthy very negative consequences could be expected. For example, those with unexplained skin disease were ostracized in ancient Israel. Leviticus (written around 1400 BC) in the Old Testament provides a graphic account of the separation that occurred with those diagnosed by the priests in the line of Aaron with what was called tzaraath or “leprosy.” It did not matter who you were—royalty or average person—such skin disease meant you lived your life away from your family and friends. The misery of those with these miscellaneous skin diseases, which may have included but was not restricted to leprosy, was reflected in 2 Kings 7:3 (860BC) by one “leper” who noted: why are we sitting here until we die?

Babies who were examined and declared defective in ancient Sparta (700 BC to 300 BC) were simply thrown into a chasm (Cenads) at a cliff of Mount Taygetus in Peloponnesus, Greece [6]. Why should the defective interfere with the lives of normal individuals? Better to kill them before they become a burden to society. Why help rehabilitate them? It became a common notion that the weak should die without help and not be allowed to interfere with the normal population. The classic Greek philosopher, Plato (424 BC-347 BC), was concerned that the disabled would interfered with a world of potential perfection—noting: “The offspring of the inferior, or of the better when they chance to be deformed, will be put away in some mysterious, unknown place, as they should [6].”

Some religions weighed in on this concept and felt that birth defects and disabilities, which may not be curable anyway, was simply the punishment of God because of the sins of their parents [6]. This, if disability has such a theological cause and is untreatable, why try to...
help the weak and lamb? The Old Testament states that the blind and lame were forbidden from entering the house of the Lord while the New Testament noted that demon possession was the cause of at least some mental illness.

William Shakespeare (1564-1616) referred to those with mental retardation as “court fools” because they could get away with saying anything they wanted in the royal courts [7]. Those with mental retardation were called “village idiots” in 19th century Western Europe and they lived their lives as court jesters, church dependents and beggars [1]. The hara-mata of misguided, mythopoetic persons later in the 20th century would tragically seek to establish a viceripe vinculum between vaccine science and mental retardation as well (vida infra).

The initiation of vaccinology

Indeed, humans have spent tens of thousands of years concerned that the weak and handicapped are ill and vapid because of sacramental underpinnings and not worth the effort in helping them. However, there were some, including physicians, who did not agree with such ideas and felt that everyone should be helped to a life of optimal salubriousness. The general practitioner, Edward Jenner MD (1749-1823) was one who wanted to help his fellow human beings and in this wish, he eventually has helped prevent disease in more people than anyone else in human history. He became a successful family physician and set up his practice in 1773 in his native Berkeley, England.

Dr. Jenner found a land devastated by one of the greatest killers of humans, smallpox, that lead to death in over one third of those infected for thousands of years. After astute observations he inoculated (using what was called the Turkish method) an 8 year old local farmer’s son, James Phipps, with cowpox in 1796; later this boy was exposed to smallpox but did not get infected—launching in the era of vaccinology in Western civilization. One hundred and eighty one years later, the world was declared free of this deadly killer except for stockpiles in some countries [8]. The government of Spain became the first country to vaticinate the importance of smallpox vaccination by launching the world’s first immense immunization campaign from 1803 to 1813 saving untold thousands of lives [9].

The initiation of vaccine agon

Unfortunately serious concerns with vaccinations began as soon as the era of vaccines started and has remained with us to this very day [1,10,11]. A number of people began a trompery against immunizations as soon as progress with vaccinations was observed much as occurs today despite the clear success immunizations have had in removing many other vaccine preventable diseases, including measles, rubella, congenital rubella syndrome, Haemophilus influenza, hepatitis B, tetanus, pertussis, and so many more deadly infections [10,12].

Complexities of this new science along with stinging criticism from anti-vaccine persons crippled the development of new post-smallpox vaccines in the 19th century. The next vaccine to arrive was the rabies vaccine in 1885 followed by cholera vaccine in 1896, typhoid vaccine in 1896, and plague vaccine in 1897. One of the key factors in threatening the progress of vaccinology and limiting the number of people willing to be vaccinated was the emergence of highly intelligent persons who successfully argued against using this new science. One of the stimulants for this objection was the 1853 Vaccination Act in England that mandated the public must get the smallpox vaccination [13]. Telling people what they must do can sometimes back-fire and this occur with vaccines both then and now.

Arguably the first charismatic leader of this movement was Alfred Russel Wallace (1823-1913) who was born in Monmouthshire, Great Britain the year Edward Jenner died. Wallace was a brilliant, mullish scholar who became a well-known biologist, explorer, geographer, naturalist, and anthropologist. He is cited by history as the co-discoverer of natural selection. He also became one of the leaders of the anti-vaccine campaign in England in the 1880s. Wallace argued that no one should be forced to get a vaccine because of violation of natural laws of ethics but also then joined forces with those arguing that the smallpox vaccine was not safe, a claim not without merit at the time. He also argued that such a treatment would upset the balance of nature and that principles of natural selection should rule. If one is weak and cannot live unless given artificial, unnatural aid, then one should meet the fate that was intended by nature. This was in line with thousands of years of intuitive reasoning by humans that the weak should perish and wake way for the strong.

This was consistent with the jeremiad by Plato about the inferior and deformed (vida supra). This concept was also coterminous with the Old Testament isolating those called lepers so as not to contaminate or defile the healthy. This is synergistic with thinking that illness is due to the sins or peccadilloes of the parents and it is up to God, not man, to save these children. Many humans concluded that one must not rely on science but on irrefragable religious creeds and principles of prestidigitation to live.

Wallace challenged the medical establishment in regards to vaccinations and encouraged all to avoid such a dangerous treatment method that was unnatural or against the laws of nature and which was more important than any rule established by untrustworthy scientists. Wallace was joined by some prominent scientists of the Victorian age to remove the compulsory vaccination act and discredit the vaccine paradigm. He argued with the journal, Lancet—a medical journal that would come to prominence in the vaccine world in the 20th century. The Lancet diakneuasts noted that Wallace and his colleagues ignored large amounts of scientific data in arriving at their anti-vaccine conclusions—a stance noted in the 21st century with those arguing against vaccines [14]. Little wonder that more progress in vaccination was slowed and the next vaccine was developed in France and certainly not in England. Unfortunately such events would repeat themselves in the 20th century with severe consequences for the public health. The criticism that vaccines are dangerous and un-natural remains with the public consciousness and domain even in the 21st century [15].

The impact of Autism on the 20th Century Anti-vaccine Movement

As smallpox was the catalyst for anti-vaccine sentiment in the 19th century, autism (autistic spectrum disorders) has been the catalyst for antipodal positions against vaccines in the 20th and now 21st century. The first description of autism was probably that of a 12 year old boy that was commented on by the proclaimed founder of the Reformation, Martin Luther (1483-1546), in the works of Luther’s notetaker, Mathesius [16]. The courts of 18th century Scotland provides one of the earliest well-documented cases of autism with the legal recordings of Hugh Blair (Borgue, Scotland) who was due to gain an inheritance and his brother was arguing in court why he was not fit for such a beneficence [17]. A feral child was caught in 1798 in Aveyron, France who was treated by Jean Itard, a medical student, and called the “Wild Boy of Aveyron” [18].
Autism was not named as such until the 20th century based first on the work of Leo Kanner (1894-1981), whose illustrious career at Johns Hopkins University (Baltimore, Maryland) led to the development of child psychiatry in the United States [19]. Kanner published a classic article in 1943 called *Autistic Disturbances of Affective Contact*, based on his astute observations of 11 children with features we now associate with autism [20]. His work centered on what was called early infantile autism or Kanner’s autism and this became part of the spectrum now identified as autistic spectrum disorders [21,22]. It was unknown what caused autism and that allowed various so-called experts to pontificate their own theories. Kanner’s original theory was that autism was caused by mothers who were unable to relate in a healthy social manner to their babies.

Again, the scientists had it wrong in a long line of false and even dangerous theories on health and disease. This concept of blaming mothers for the poor social skills and untreatable psychiatric problems of infants and children was an unfortunate event in the development of understanding as well as misunderstanding about autism. Humans have blamed patients and families for various unmanageable problems for thousands of years. Unfortunately healers and religious experts, for example, blamed many medical and psychological problems of adolescents on the fact that teenagers were sexually active.

For example, Claudius Galen (130-210AD), the great Greek physician to the emperor and gladiators of Rome, linked countless incurable teenage diseases (i.e., acne, epilepsy, depression, others) to teenage masturbation. Galen pontificated: “watch carefully over this young man, leave him alone neither night nor day; at least sleep in his chamber. When he [the masturbator] has contracted this fatal habit (i.e., masturbation), the most fatal to which a young man can be subjected, he will carry its painful effects to the tomb—his mind and body will always be enervated” [23].

Thus, placing the blame of a condition on someone fit in with earlier ways of blaming the patient or the parents that had been occurring for eons of time. Bruno Bettelheim, PhD (1903-1990) was a well-known expert in children with autism who taught at the University of Chicago from 1944 to 1973. He agreed with the Kanner concept that autism is caused by what became popularized as “refrigerator mothers” [24]. Mothers of children with autism knew this was not the case and a considerable mistrust of medical authorities was thus worsening. Challenges to such a position were mounting as mothers publically stated and even wrote that their children did not develop autism from “cold” mothers [25]. Such a bloviation by medical experts was refuted by the public and the public was eventually proven correct!

As the American public became concerned with such ideas, they were vulnerable to false theories, as humans for eons have been. There was a one-hour television presentation in 1982 that appeared in the whole cell pertussis vaccine was blamed for causing severe vaccine reactions in infants leading to encephalopathy and irreversible brain damage [26]. The influence of such media-driven anti-vaccine nescience cannot be underestimated in stimulating and continuing the hysterical anti-vaccine rhetoric seen in the 21st century [27]. The pertussis vaccine was changed adding to the public’s education that it was not safe in the first place.

In the penultimate and fin de siècle decades of the 20th century, the public was seeking, as in the days of Wallace, champions to encourage anti-vaccines, identify the cause of autism, and stop blaming parents for their children’s problems. Adding fuel to this fire is the public perception that unknown numbers of doctors and pharmaceutical companies value money over the health of people [1]. Starting in 2000 the U.S. Institute of Medicine has published comprehensive reports on medical errors revealing the thousands of patients who die at the hands of unprofessional and/or error-prone doctors [28,29]. Why should the public trust doctors and pharmaceutical companies? Healers have been proven wrong for thousands of years—wrong with their theories of illness and wrong to push toxic treatments on the unwary public.

Mothers upset with doctors blaming them for their autistic children and an untrusting public was in need of prophets to lead them out of confusion. Enter Bernard Rimland, PhD (1928 to 2006) who was an American psychologist credited for impressive scientific work in the field of childhood mental retardation, autism, learning disorders, attention deficit hyperactivity disorder, and other maladies of children [1]. His view was that mothers were not to blame for their autistic children which was a major breakthrough in the eons of human existence blaming parents their children’s diseases. He founded the Autism Society of America in 1965 and in 1967 became the director of the Autism Research Institute in San Diego, California. He was viewed by these relieved and adoring mothers as a modern Ptolemy’s pharos providing lucid and salient concepts of children with disabilities.

As Dr. Rimland looked at various researches he felt that vaccines (thiomersal) were behind the “epidemic” of autism in America and elsewhere. Though organized medicine did not agree with this opinion, the public had its champion. Mothers were vindicated and as they watched their beautiful children slip into the horrible bonds of autism while receiving childhood vaccines, people became convinced of this cause and effect relationship. Indeed, “healers” were at it again with treatments that were dangerous yet profitable for countless unprofessional scientists and clinicians.

As in the days of Wallace, other anti-vaccine champions emerged. Andrew Wakefield (born: 1957) is a trained surgeon and researcher from England who published a now infamous paper in *Lancet* in 1998 that described his research findings seeking to demonstrate a link between the MMR vaccine and he called “autistic enterocolitis” [30]. This research was eventually discredited and *Lancet*, the journal that did battle with Wallace in the 19th century, eventually withdrew the Wakefield paper [31-34]. However, there was now another scholar for the suspicious public to believe, along with movie stars and various media goliaths who either believed the autism-MMR link or raised the possibility of such a link. This continues to the present day even though the scientific literature is thorough and lucid that vaccines do not cause autism or other disorders [35-39].

**Anti-vaccine animus in the 21st century**

Parents have various and complex reasons for rejection of some or all vaccines and the results of such historical perspectives is part of this complexity. The public remains skeptical and the media is ready to pursue this apocalyptic story [40-43]. Parents and the public remain confused and sometimes go along their individual thought patterns which can conflict with other parent’s decisions. Some feel that too many vaccines overload the child’s immune system, that low disease severity does not warrant use of potential “risky” (toxic) vaccines, and some feel that sympathy still exists for Wakefield and other “prophets” who are against vaccines [44]. Parents simply may not rely on evidence of science and medicine to determine their decisions about vaccines for their children; some are concerned over the impartiality of their physicians and do not trust neither them nor the pharmaceutical companies in regards to vaccine information [45,46]. Vaccine refusal...
has spread beyond MMR vaccines to other immunizations as well involving influenza, pertussis, hepatitis B, and others—even those whose chronic illness puts them at increased risk from vaccine preventable diseases [47].

Parents are truly perplexed about potential adverse effects of vaccines and the actual need for vaccines [11]. On the basis of the Allais paradox and fuzzy-trace theory, some parents choose to ignore vaccines and not risk feeling bad about potential risks or negative aspects of “toxic” vaccination [48]. This is also part of a generalized movement in the public in which power has shifted from scientists and physicians to the patient while anti-vaccine material is consistent with a message some wish to hear. The fact that research that is consistent with their anti-vaccine message is unscientific remains immaterial because such conclusions fit with a message they wish to hear [15]. The obdurate message, some say, is not “anti-vaccine” but one of a “pro-safe vaccine” [15]. Information on the internet can be inaccurate and part of the anti-vaccine movement includes material even written by nescient physicians and non-physician healthcare professionals [49]. Also, complicating this issue is that some physicians are not knowledgeable about au courant vaccine recommendations that often change and offer limited effective rebuttal to anti-vaccine information [50]. Healthcare workers may refuse vaccinations for them and may be susceptible to the complex, minacious, mesmerizing anti-vaccine sentiment that has been present since the science of immunizations began [51-57].

This is not to deny the potential positive influence of pro-vaccine physicians in selective arenas [58]. However, epidemics of vaccine preventable illness (i.e., measles, mumps, pertussis, others) are being recorded around the globe in the 21st century because of parent’s reluctance to vaccinate their children [58-68]. Parents are rushing to the American court system to get payment for the damage allegedly caused by vaccines [69]. Vaccine companies may cut back on their efforts to manufacture and even produce new vaccines if this movement augments ever more [70].

Why should scientists and clinicians be concerned about such agons in the 21st centuries? Many scientists continue to develop amazing new vaccines and clinicians continue to treat patients. It is important to understand that some of the population is not being given the full benefits of vaccine science. It is important to understand that the reasons for such animadversion and anti-vaccine ballyragging are complex and deeply rooted in many historical factors. Simply going about our business as usual in a lethean manner is not helpful to the public and to the defenseless children who have and will suffer preventable morbidity and mortality because of well-meaning but misinformed parents. Effective strategies to blunt the gains of the professional anti-vaccine basilisk can and should be developed based upon a perspicacious understanding of the history of such a movement.

The reasons for low vaccination rates among children in various countries are complex and multi-varied. Part of this complexity is the various reasons underlying anti-vaccine attitudes and knowledge found in many countries [71]. The rise in use of complementary and alternative medicine leads to a natural rise in anti-vaccine sentiment [72]. We must not be discouraged by the seemingly irrefragable nature of the parents and their benighted advisors who persistently and jauntily resist vaccine science. Direct and sustained counter-marketing programs aimed at the internet-anti-vaccine messages is recommended [73]. Some suggest that focusing more on individual parents may be more productive than focusing on anti-vaccine groups [74]. Public reluctance to accept vaccines complicates other disease-stimulating factors such as vaccine failures, falling antibody levels from previous vaccinations, and others [63,75,76].

Summary

Homo sapiens have been debating the merit of preventing and managing illness and deformity for over 80 millennia. Humans have been distrustful of healers whether they were ancient medical priests or modern opulent physicians. The idea of medications being toxic and/or un-natural has been applied to immunizations over the past two centuries by a variety of anti-vaccine groups that have included scientists, physicians, and an assortment of the general public. Strategies to offset the gains of anti-vaccine pecksniffianism are possible if scientists and clinicians wish to do so and utilize a mult-tiered, carefully developed strategic movement of their own based on an understanding of the historical underpinnings of the current anti-vaccine animadversion of vaccine science in the 21st century.

It is important that the pro-vaccine community not dismiss and ignore the anti-vaccine group as maundering maudits. Parents are not careless myrmidons blindly listening to maniacal mants but are people who love their children and are sincerely as well as historically afraid of potentially unnatural, toxic, and unneeded vaccines. In addition to the development of new vaccines, we must seek to carefully confront the au courant vaccine animus to help the defenseless children who will otherwise be harmed. There is no available nempetho to ease or ameliorate the aeonian sorrows of a parent who has lost a beloved child from a vaccine preventable disease because of failure to provide their lost one with a vaccine that is easily available and has been produced by the post-Jenner science of vaccinology. We must remain trustworthy, tigrine, tinnitus tuteleis of these precious children and be worthy of our tellurian existence.

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