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**Dr. Koch: A Cancer Quack?**  
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**Abstract**

This paper discusses the life and medical research of Dr. William F. Koch, a physiologist who claimed to have discovered a cure for cancer in the 20<sup>th</sup> century. Dr. Koch's early education and research is discussed as background. The paper presents two allegedly successful results of Dr. Koch's treatment, while also presenting quotes and opinions of skeptics of Dr. Koch's work. Two FDA trials against Dr. Koch are discussed, as well as a successful FTC trial and appeal. Finally, the paper discusses typical characteristics of a quack, and analyzes Dr. Koch under this rubric. The conclusion of this paper finishes the story of Dr. Koch's life and highlights some questions remaining understand.

**Introduction**

“Cancer” describes a class of diseases characterized by uncontrolled division of cells and the ability of these cells to invade other tissues. There is no scientifically-proven, universal “cure” for cancer. However, there have been many people who claim to have found such a cure. One such person in the 20<sup>th</sup> century was Dr. William F. Koch.<sup>1</sup> Dr. Koch claimed to have discovered a formula that could be injected into cancer patients to rid the body of the cancerous tumor. Dr. Koch had many followers who vehemently believed in his treatment, but even more skeptics.

The following paper begins by discussing Dr. Koch’s early research and medical qualifications in Part I. In Part II, the paper discusses specific anecdotes and insights about Koch’s believers and his skeptics. The two FDA trials and the FTC trial and appeal are discussed in Part III. Finally, Part IV discusses Dr. Koch under the framework of typical characteristics of quack doctors and their work. The conclusion wraps up the paper and finishes Dr. Koch’s story. The reader is left with unanswered questions regarding Dr. Koch and his believers.

## **Part I**

### **Dr. Koch: A Short Biography**

William F. Koch was lived from 1885-1967. He attended the University of Michigan, where he received his Bachelor of Arts in 1909, his Master of Arts in 1910, and his Ph.D. in 1916.<sup>2</sup> Dr. Koch received his M.D. in 1918 from the Detroit College of Medicine and Surgery, where he was a professor of physiology

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<sup>1</sup>Dr. Koch was not alone; there were many “cancer quacks” peddling remedies during the 20<sup>th</sup> century. Another extremely influential cancer hoax of the 20<sup>th</sup> century was the Hoxsey treatment, which consisted of a pink medicine and a black medicine and claimed to cure internal cancer.

<sup>2</sup>The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

from 1913-1919.<sup>3</sup> Dr. Koch worked from a physiologist's point of view and developed theories on how the chemistry of the natural immune system of the body worked.<sup>4</sup> Koch's early research focused on the parathyroid glands. Koch concluded that the tetany<sup>5</sup> that occurs after the parathyroid glands are removed was due to the accumulation of toxic substances in the body. These toxic substances blocked the normal tissue oxidation process. This was a very important discovery in Dr. Koch's research and helped shape his theories on cancer treatment.

Dr. Koch became widely known for injecting a substance into a cancer patient's bloodstream, known as the Koch Treatment.<sup>6</sup> The substance was originally called "synthetic anti-toxin," but was later called "glyoxylyde."<sup>7</sup> Dr. Koch, at least initially, was unwilling to release his formula for this substance.<sup>8</sup> The dilution of the treatment changed significantly over time, but later in his career, Koch disclosed the formula as: one part glyoxylyde to one trillion parts water.<sup>9</sup> Dr. Koch explained how the drug worked in a newspaper article published in Detroit in 1919:

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<sup>3</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 255 (1998).

<sup>4</sup>The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

<sup>5</sup>Tetany is "a condition of physiological calcium imbalance that is marked by intermittent tonic spasm of the voluntary muscles and is associated with deficiencies of parathyroid secretion or other disturbances." Merriam-Webster's Medical Dictionary, *Tetany* (2002) available at: <http://dictionary.reference.com/search?q=tetany> (last visited April 19, 2006).

<sup>6</sup>BC Cancer Agency: Care & Research, *Koch Treatment/Koch Synthetic Anti-toxins* (2000), <http://www.bccancer.bc.ca/HPI/UnconventionalTherapies/KochTreatmentKochSyntheticAntitoxins.htm> (last visited April 8, 2006).

<sup>7</sup>*Id.* Koch initially called his formula "anti-toxin" because the formula supposedly consumed the toxin in the body (i.e. cancer, in this case) by restoring the body's natural immunity through regenerating the oxidation power of the damaged cells, thereby curing the patient. See Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 256-7 (1998).

<sup>8</sup>The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

<sup>9</sup>BC Cancer Agency: Care & Research, *Koch Treatment/Koch Synthetic Anti-toxins* (2000), <http://www.bccancer.bc.ca/HPI/UnconventionalTherapies/KochTreatmentKochSyntheticAntitoxins.htm> (last visited April 8, 2006) Koch relied on the dilution principle, and claimed that his treatments became more serviceable the more he diluted them. At his final treatment levels, glyoxylyde was combined with one trillion times the amount of water that had originally composed Koch's treatment. See Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 258 (1998). Note: it is unclear whether the formula for glyoxylyde itself was ever disclosed.

The serum is carried to the cancer by the blood. The cells are killed. Their osmotic pressure increases and they become waterlogged and swell. The pressure of the swelling causes more pain until the killed part has been disintegrated and absorbed, and the absorption, or burning up, causes fever, usually occurring about 12 hours after the injection of the serum. Cancer tissue so absorbed also serves as nourishment. If the patient has been starved a long time because of cancer of the stomach, a large cancer, paradoxical as it is, is a benefit since, once killed, it supplies food elements and actually gives strength to the patient. Cancers previously treated with X-ray or radium, however, if killed by the serum treatment, gives products that are very toxic, sufficiently so, in some instances to kill the patient.<sup>10</sup>

At first, it appeared that Koch's research would receive a positive reaction from the medical community. He began working with the Wayne County Medical Society and its Cancer Committee. However, after Dr. Koch had only worked at Wayne County Medical Society for about a month, the research and investigation was terminated by the Cancer Committee.<sup>11</sup> Proponents of Koch's research and treatments claim that this termination was due to Koch's refusal to share the chemical compound of his injections with the medical community at large.<sup>12</sup> Koch, in a letter to the Wayne County Medical Society, explains the purpose for this refusal: "I shall contribute my findings in every detail only when I can establish them completely scientifically, so completely, indeed, that any question can be answered by the scientifically obtained facts in hand."<sup>13</sup> In fact, it is typical for quack doctors to keep their formulas secret.<sup>14</sup>

Koch's family also extensively explains this decision to withhold information about his research on their website:

"A researcher does not want another person to try to duplicate one's original research until that original research has been perfected. If a person, in trying to duplicate the original research of another, is incompetent and fails then this failure, unfortunately, is a reflected upon the discoverer only...Once the validity of [Koch's] research had been clearly established and accepted by the medical profession, it would then be proper for him to make full disclosure of his scientific discoveries. . . Dr. Koch felt that it was important to withhold the full identity of the substances he was working with to prevent incompetent or unscrupulous manufacturers from flooding the market with specious or untested preparations and at the same time claiming their products to be the Koch medications."<sup>15</sup>

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<sup>11</sup> See The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

<sup>12</sup> See *id.*

<sup>13</sup> *Id.*

<sup>14</sup> See also notes 76-78, *supra*.

In the following period, the issue of secrecy of the formula became the paramount issue, while the effectiveness of the treatment was secondary. Koch's proponents blame the medical industry and the AMA for the ultimate failure of Koch's treatment to be widely disseminated.<sup>16</sup>

## **Part II**

### **Dr. Koch's Believers**

Still today, there are some people who strongly believe in Dr. Koch's research and treatments.<sup>17</sup> They cite the remarkable recoveries of patients treated by Dr. Koch.<sup>18</sup> Two examples described in detail on the Koch family's website are Judy McWhorter and Mrs. Fritts.<sup>19</sup> The following facts are compiled from a notarized affidavit from Judy's parents, the McWhorters, and a notarized affidavit from Mrs. Fritts' husband, both of which appear on the Koch Family website.<sup>20</sup>

#### *Judy McWhorter*

Judy McWhorter became ill at only six weeks of age. Her main symptom was an enlarged and hard abdomen. Doctors X-rayed and took a biopsy of her abdomen, and concluded that there was a high degree of malignancy

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<sup>17</sup> See, e.g., Tom Valentine, *Cancer Masons: A Cult of Death* (2004), [http://www.tomvalentine.com/html/cancer\\_masons.html](http://www.tomvalentine.com/html/cancer_masons.html) (last visited April 19, 2006) ("Dr. Koch's ability as a biochemist thrust his thinking decades ahead of his time... glyoxylyde... was, perhaps, too biochemically advanced for the establishment cranks to understand.... When the institutionalized evil destroyed Dr. Koch, they set molecular biology back by at least half a century"). See also Rochus Börner, Ph.D., *Politics and Suppression in the "War on Cancer"* (2004), <http://www.suppressedscience.net/cancer.html> (last visited April 25, 2006) ("Just how far we have regressed in treating cancer becomes apparent when we review the story of Dr. William F. Koch... who was curing cancer with one shot in the 1930s and 40s").

<sup>18</sup> See, e.g., Tom Valentine, *Cancer Masons: A Cult of Death* (2004), [http://www.tomvalentine.com/html/cancer\\_masons.html](http://www.tomvalentine.com/html/cancer_masons.html) (last visited April 19, 2006) (naming Suzanne Caum, an alleged terminal cancer patient cured by Dr. Koch).

<sup>19</sup> The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.* (2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

<sup>20</sup> *Id.*

which involved 85% of Judy's liver. Her parents were advised that Judy's case was hopeless, and that she should be taken home and made comfortable for the remainder of her life. Doctor's concluded that Judy's life expectancy was 21 days. Doctors advised Judy's parents against use of the Koch Treatment, explaining that it was useless and would only inflict unnecessary pain upon Judy. Because the treatment was free and the parents had no other hope, Dr. Koch's treatment was administered to Judy. Within ten days, Judy showed definite improvement, and within three months, she had a healthy and normal appearance. Nine months later, doctors could not find any trace of a growth in Judy. One newspaper that reported Judy's recovery used the headline: "Doctors convinced that Little Judy Overcame Cancer Ailment Herself." In other words, Dr. Koch's treatment was not responsible for her recovery. Judy's parents, however, believed in Dr. Koch's treatment, and issued a statement describing these events in support of him.<sup>21</sup>

*Mrs. Fritts*

Mrs. Fritts was another of Dr. Koch's success stories. She was a patient of Dr. Koch during his brief time working with the Wayne County Medical Society. Mrs. Fritts had a growth in her abdomen, and doctors other than Dr. Koch had operated to determine that this growth was cancerous. Like Judy, the doctors told Mr. Fritts that there was no hope for his wife, and that he should keep her comfortable for the rest of her life. Mrs. Fritts' life expectancy was a few months. When the Wayne County Medical Society pulled the plug on Dr. Koch's research project, Mrs. Fritts and her husband elected to continue personal treatment by Dr. Koch. She received treatment from Dr. Koch for five weeks. At the end of that period, Mrs. Fritts appeared to be cured of any cancer, and lived for another 16 years, when she died of an accident, according to sources of the Koch Family. Mrs. Fritts also signed a notarized affidavit 8 years after being treated by Dr. Koch, confirming that her husband's affidavit was true and that she was in "splendid health" and weighed

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<sup>21</sup>For references from the story of Judy McWhorter, refer to note 19, *infra*.

160 pounds. After Mrs. Fritts death, an autopsy revealed no trace of malignancy.<sup>22</sup>

In addition to former patients that he allegedly cured with his treatments, Koch had a number of religious followers<sup>23</sup> as well as a few medical doctors<sup>24</sup> who supported him.

### **Skeptics of Dr. Koch's Treatment**

Others were not as confident in or supportive of Dr. Koch's research. Time magazine, for example, published three disparaging articles about Koch between 1934 and 1948. In 1934, Time introduced Koch's research and treatment in an article entitled "Koch's Concoction," giving the treatment an obvious negative connotation.<sup>25</sup>

The article also refers to Koch's treatment as "medical propaganda," explains that "[d]octors have branded [Koch] a quack" and proceeds to tell the story of a layman's journey to promote Dr. Koch's treatment and theories.<sup>26</sup> Clearly, Time magazine was not a Koch supporter.

More importantly for Koch's treatment than public opinion was the opinion of the medical field. The American Medical Association was also very skeptical of Dr. Koch's work and fully supported the FDA in its trials against Dr. Koch. The Journal of the American Medical Association denounced Koch's therapy as unscientific and unreliable.<sup>27</sup>

### **Part III Proceeding the Food and Drug Administration Trial**

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<sup>22</sup>For references from the story of Mrs. Fritts, refer to note 19, *infra*.

<sup>23</sup>See note 47, *supra*.

<sup>24</sup>See note 75, *supra*.

<sup>25</sup>"Koch Concoction." Time 10 Dec. 1934: 68-70.

<sup>26</sup>*Id.* at 68. The layman that supported Koch was named Mr. Anderson. Mr. Anderson wrote letters to his rich socialite friends in Palm Beach and Bar Harbor in order to solicit complaints about Dr. Koch's alleged persecutions. Doubtless these persecutions are referring to the stories on the Koch Family website about the AMA combating Dr. Koch because he wouldn't release his formulas. The Koch Family, *supra* note 2. The article goes on to ridicule Mr. Anderson's methods: "[Mr. Anderson] wrote: 'Dr. Hartwell has promised us one thousand cases of cancer...' ... Then realizing he ought to have some warrant for such a statement, he had doctor friends ask Dr. Hartwell for an opinion." "Koch Concoction" at 68. The article clearly emphasized the futility and ridiculousness of a lay person touting the medical effectiveness of a doctor's treatment.

<sup>27</sup>See note 81, *supra*.

Prior to 1938, the Food and Drug Administration (“FDA”) would have had a hard time reaching Koch with the applicable federal law. The Sherley Amendment in 1912 to the Food and Drug Act of 1906 expanded the earlier prohibition of false statements regarding the identity or composition of drugs to include a prohibition of false and fraudulent *therapeutic* claims.<sup>28</sup> However, the FDA’s hands were still tied after this amendment was passed, because the amendment required proof of both falsity and fraud.<sup>29</sup> In 1926, the FDA decided that Koch’s methods of distributing his treatment did not violate the Food and Drug Act of 1906 because no labeling was used to tout therapeutic claims when the drug was sent, and the drug was only sent to practitioners.<sup>30</sup> Because the FDA was convinced that Koch and the practitioners who used his cure were “a disgrace to the medical profession,” the FDA continued to look for a way to reach these doctors.<sup>31</sup>

Fortunately for the FDA, the passage of the Food, Drug and Cosmetic Act of 1938 signified important changes to the federal law. This statute eliminated the fraud requirement of the Food and Drug Act of 1906, mandated that labels list all active ingredients and required factory facilities be accessible for FDA inspection.<sup>32</sup> Therefore, a drug that touted false therapeutic claims alone would violate the new statute, even

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<sup>28</sup>37 Stat. 416 (1912) (commonly known as the “Sherley Amendment”). Interestingly, the Sherley Amendment was provoked by the Bureau of Chemistry’s (FDA’s predecessor) loss of a cancer labeling case. See James Harvey Young, *The Medical Messiahs: A Social History of Health Quackery in Twentieth-Century America* 362 (1967).

<sup>29</sup>Wallace F. Janssen, *Cancer Quackery: Past And Present* (2005) [Reprinted from FDA Consumer July-August 1977], available at <http://www.cancertreatmentwatch.org/q/janssen.shtml> (last visited April 20, 2005).

<sup>30</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 264 (1998), citing W. Frisbie to A. B. Wadsworth, 31 August 1926, FDA Records, AF 14626, vol. I, Accession 63A292, box 427. By not touting therapeutic claims on the labeling, Koch avoided being liable for falsity under the Food and Drug Act of 1906. There were also exceptions in place for medications that were sent only to members of the medical profession, which further crippled the FDA from reaching Dr. Koch. See e.g., 15 U.S.C. §55 (1953), (“No advertisement of a drug shall be deemed to be false if it is disseminated only to members of the medical profession, contains no false representation of a material fact, and includes, or is accompanied in each instance by truthful disclosure of, the formula showing quantitatively each ingredient of such drug”).

<sup>31</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 264 (1998), quoting Walter B. Simmons to Chief, Chicago Station, 19 June 1932, FDA Records, AF 14626, vol. I, Accession 63A292, box 427.

<sup>32</sup>52 Stat. 1040 (1938) (Commonly known as the “Food, Drug, and Cosmetic Act of 1938”).

in the absence of fraud. Also, under the new statute, Koch was required to label his treatments with all active ingredients. Finally, for the first time, Dr. Koch was required by federal statute to open his laboratories to FDA inspectors. This expansion of its reach over doctors such as Dr. Koch marked an extremely important victory for the Food and Drug Administration which fought hard for these new provisions.

The victory becomes especially obvious in the case of Dr. Koch. Despite the existence of substantial evidence to the contrary, the previous section shows the extreme devotion and faith that Dr. Koch and his followers had in the Koch Treatment. It seemed unlikely that Dr. Koch was trying to defraud his patients, but instead seemed at least plausible that he truly believed in his “cure.” The FDA would not be able to prove fraud if Dr. Koch honestly believed in his treatment. Alternatively, even if Dr. Koch was acting fraudulently, the FDA may have had a hard time proving that he wasn’t sincere, as evidenced by the fact that he had convinced many lay and medically-trained people that his cure was genuine. With the elimination of the fraud requirement, these concerns disappeared. Secondly, compelling Dr. Koch to include all active ingredients on the labels for his treatments and giving the FDA access to his laboratories gave the FDA much greater insight into the composition of his formulas.

## **FDA Trials**

In 1940, the FDA began to build a case against Koch. During that year, two FDA representatives visited Koch’s office in Detroit. Koch explained to the FDA officials that he had moved his laboratory to Florida, but transferred complete (except for the labeling) formulas to Detroit for administering the treatment on patients.<sup>33</sup> In 1941, FDA officials traveled to Koch’s Florida laboratory to inspect his manufacturing meth-

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<sup>33</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 265 (1998), citing Vincent LaPiana to Chief, Chicago Station, 6 August 1940, FDA Records, AF 14626, vol. 2, Accession 63A292,

ods.<sup>34</sup> Koch was finally arrested in 1942 in Florida, after a grand jury indictment in Detroit.

Once again, Time magazine reported the development, revealing that Dr. Koch and his brother had been indicted for violating the Food, Drug, and Cosmetic Act.<sup>35</sup> The article refers to the Koch treatment as a “hoary old nostrum” and attempts to explain the flawed treatment in laymen’s terms: “[s]ince cancer is not caused by bacteria but is an anarchy of the body’s own cells, a cancer anti-toxin is a contradiction in terms.”<sup>36</sup> The article also attempts to illuminate the absurdity of the formula used by Dr. Koch, by quoting US Attorney, John C. Ray: “[c]hemical analysis shows that the dilution [of Glyoxylyde] is so infinitesimal that it would be like dumping a cocktail in the Detroit River and expecting to get a kick out of the water going over Niagra Falls.”<sup>37</sup>

The trial against Dr. Koch lasted 18 weeks, beginning on January 12, 1943, and was the longest trial in FDA history at that point, with 9,500 pages of testimony, 49 government witnesses and 104 defense witnesses.<sup>38</sup>

The FDA’s two main arguments were that (1) Koch’s treatments were misbranded, and (2) Koch made false claims regarding the effectiveness of the treatments.

To collect evidence for its arguments, the FDA brought in its own chemists and chemists from Northwestern  
box 427. It is interesting that Koch chose to send the formulas complete, except for the labeling. It seems very plausible that he was trying to avoid the potential liability of putting his product into interstate commerce with labels that could violate federal FDA and FTC law. By leaving the labels off the product until it reached Detroit, and administering the drug within Michigan, the FDA would have a much harder time proving that the product with the potentially false labeling had ever entered the stream of commerce.

<sup>34</sup> See Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 265 (1998), citing “Summary of our files on Koch Cancer Foundation,” [September 1941], FDA Records, AF 14626, vol. 2, 63A292, box 427. See also, Wallace F. Janssen, *Cancer Quackery: Past And Present* (2005) [Reprinted from FDA Consumer July-August 1977], available at <http://www.cancertreatmentwatch.org/q/janssen.shtml> (last visited April 20, 2005).

<sup>35</sup> “No More Pandiculation.” Time 20 Apr. 1942: 66.

<sup>36</sup> *Id.* It is important that Time articulated the treatment flaws in this way. One thing that made Dr. Koch so powerful was his sophisticated medical training and ability to convince lay people that his explanation was the correct one. Time was trying to break down his medical explanations into language that a lay person can see doesn’t make sense. Whether or not the explanation provided in Time is correct, their attempt to explain away Koch’s complicated medical analysis with simple logic, presumably to allow innocent people to avoid falling into Dr. Koch’s trap, is exemplary.

<sup>37</sup> *Id.*

<sup>38</sup> Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 268 (1998), citing Transcript of *U.S.A. v. William F. Koch et al.* in US District Court for the Eastern District of Michigan, Southern Division, pp. 6817-32.

University and the University of Wisconsin. These chemists concluded that the ampoules of Koch's Treatment contained nothing but distilled water.<sup>39</sup> In addition to expert opinions, the FDA case consisted of documented experiments on guinea pigs and mice and found Dr. Koch's treatment to be inert and ineffective.<sup>40</sup> Lawyers for the prosecution also explained to the jury that if the medications were misbranded or the treatments ineffective, Koch was guilty regardless of whether he was deliberately deceiving the public, or truly believed in his treatment.<sup>41</sup>

Koch's defense, on the other hand, rested mostly on testimonials. Various Koch supporters, including Dr. David Arnott,<sup>42</sup> testified on his behalf. In total, the evidence presented at trial claimed that Koch's treatment cured 69 different ailments, including cancer.<sup>43</sup> The defense also equated the FDA's treatment of Koch to the treatment of historical figures such as Socrates, Newton, and the Salem "witches."<sup>44</sup>

Unfortunately for the FDA, the jury could not come to a verdict, and the case was dismissed after eight days of deliberation. A survey of the jurors revealed that three jurors refused to change their initial acquittal ballot.<sup>45</sup> A second trial in 1946 largely duplicated the first. The trial lasted longer than the first trial, and again, Dr. Koch played a prominent role. Again, the jury wasn't able to reach a verdict. After deliberating

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<sup>39</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 268 (1998). See also California Cancer Advisory Council and Staff, *Cancer, Cancer Quackery, and the Cancer Law* 95 (1965) ("Contents are indistinguishable from water," citing the American Medical Association (1961) and the State Department of Public Health Laboratories, California (5/4/1960)). See also American Cancer Society, *Oxygen Therapy* (2005) [http://www.cancer.org/docroot/ET0/content/ET0\\_5\\_3x\\_Oxygen\\_Therapy.asp](http://www.cancer.org/docroot/ET0/content/ET0_5_3x_Oxygen_Therapy.asp) (last visited April 19, 2006) ("[G]lyoxylide therapy had no value in the diagnosis, treatment, alleviation or cure of cancer. Later, researchers were unable to confirm that glyoxylide ever existed").

<sup>40</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 268-9 (1998).

<sup>41</sup>*Id.* at 270. This reflects the lack of a fraud requirement in the Food, Drug, and Cosmetic Act of 1938.

<sup>42</sup>Dr. Arnott was a physician from Ontario who worked closely with Koch over the years. Arnott introduced Koch's treatment in Canada.

<sup>43</sup>See Wallace F. Janssen, *Cancer Quackery: Past And Present* (2005) [Reprinted from FDA Consumer July-August 1977], available at <http://www.cancertreatmentwatch.org/q/janssen.shtml> (last visited April 20, 2005).

<sup>44</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 269-70 (1998).

<sup>45</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 271 (1998), citing Walter B. Simmons to Chiefs of Districts and Stations, 28 May 1943, FDA Records, Accession 52A214, box 21.

for five days, one juror declared he was too sick to continue, and the judge was forced to dismiss the jury and declare a mistrial.<sup>46</sup> After the second trial, the FDA determined that bringing a third trial was not advisable, and in 1948, the case was ended in the Michigan courts.<sup>47</sup>

Shortly after the order of *nolle prosequi* was entered to end the case in Federal Court, Time published yet another article about Dr. Koch.<sup>48</sup> The article acknowledges the two failed FDA trials against Koch, describing the government testimony as “shocking,” and given by a “parade of witnesses.”<sup>49</sup> The article also explains that many of the government witnesses were doctors who had followed Dr. Koch’s treatment instructions, including one osteopath who treated five cancer patients with Dr. Koch’s treatment. All five patients of this osteopath, including his own wife, died.<sup>50</sup>

Additionally, the article emphasizes the cost of an ampoule of treatment (cited as \$25, with a possibility of a bargain rate of \$15) and the profitability of Koch’s business (\$100,000/year). When Time published this article, Koch had changed the labeling on his products to “no longer claim a cure for anything,”<sup>51</sup> pursuant to the Federal Trade Commission cease and desist order.<sup>52</sup> As the article notes, this omission impeded the ability of the FDA to interfere with Dr. Koch’s treatment: “[b]ut interfering with Koch will not be easy;

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<sup>46</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 272 (1998).

<sup>47</sup>All in all, the FDA’s activities on the Koch treatment were as important and extensive as the 10 years the FDA spent pursuing the Hoxsey agent later in the 20<sup>th</sup> century. See California Cancer Advisory Council and Staff, *Cancer, Cancer Quackery, and the Cancer Law* 90 (1965). After the second trial, Koch gained more support from religious fanatics, such as Lawrence P. Reilly. Eventually, Koch dissolved his corporation that had previously been in control of the Koch treatment. Instead, the drug was transferred to a religious corporation, created for this purpose. The FDA decided that a further trial held great risk of failure at enormous expense. See Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 272-4 (1998). See also Eric S. Junhke, *Quacks and Crusaders: The Fabulous Careers of John Brinkley, Norman Baker, and Harry Hoxsey*, 137-140 (2002).

<sup>48</sup>“The Koch Method.” Time 6 Sept. 1948: 58-60.

<sup>49</sup>*Id.* at 59.

<sup>50</sup>*Id.* at 59-60.

<sup>51</sup>*Id.* at 60.

<sup>52</sup>See *Koch v. Federal Trade Commission*, 206 F.2d 311, 319 (6th Cir. 1953).

Koch is, says Lawyer Goodrich, ‘probably the smartest, brightest quack in the U.S.’<sup>53</sup>

## **FTC Trials**

The Federal Trade Commission (“FTC”) also prosecuted Koch and his treatments. In 1942, the FTC got a preliminary injunction that prohibited Koch from using deceptive advertising by presenting the medications falsely as cures for diseases. The FTC invoked a cease and desist order against Koch Laboratories, Dr. Koch, and his brother which legally required the parties to discontinue use of allegedly false advertisements. The case that ensued was reminiscent of the two previous FDA trials, with 7,500 pages of testimony.<sup>54</sup> Despite complaints to the contrary, Koch and the other defendants were allowed to put on an extensive case, involving detailed accounts of 150 case histories by the defendants alone.<sup>55</sup>

The complaint in this case, filed on behalf of the FTC, claimed that the defendants “were engaged in the manufacture and in the sale and distribution in interstate commerce of certain medicinal preparations.”<sup>56</sup> The FTC cites 25 diseases that Glyoxylide purportedly cures, including cancer, leprosy, and malaria.<sup>57</sup> The defendants do not deny making these claims, but instead argue that the claims “were entirely truthful, that those as to the operation of the drugs were statements of scientific theories or opinions, which were in fact their honest and well-considered theories, and that the therapeutic value of the drugs was shown by the experience of physicians who used them.”<sup>58</sup>

Echoing words the FDA articulated to the jury in its case against Dr. Koch, the court explained “[t]he fact that petitioners made the representations in good faith is immaterial. Decision whether material facts

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<sup>53</sup> “The Koch Method.” at 60.

<sup>54</sup> *Koch v. Federal Trade Commission*, 206 F.2d at 319.

<sup>55</sup> *Id.* at 319.

<sup>56</sup> *Id.* at 314, summarizing complaint in original case to obtain the cease and desist order.

<sup>57</sup> *Id.* at 314.

<sup>58</sup> *Id.* at 315.

have been misrepresented does not depend upon the good or bad faith of the advertiser.”<sup>59</sup> Basically, the court was required to find that the defendants made false representations of material fact, regardless of their motivation.

The lower court did indeed make a finding that the defendants made false representations of material fact, stating that “the evidence of the [defendants] was unconvincing because of faulty evaluation and inaccurate diagnoses.”<sup>60</sup> Testimony was also given by a number of physicians that Dr. Koch’s treatment had no therapeutic effects with respect to any disease.<sup>61</sup> The appellate court upheld the lower court’s findings of fact.

After dismissing all of the petitioner’s issues on appeal, the Sixth Circuit affirmed the lower court’s cease and desist order, marking the first successful legal battle against Dr. Koch by a government agency.<sup>62</sup>

## **Part IV**

### **Analysis of Dr. Koch and Medical Quackery**

#### ***Cancer Quackery***

According to a report prepared by the California Cancer Advisory Council, a cancer “quack”:

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<sup>59</sup>*Id.* at 316.

<sup>60</sup>*Id.* at 318, referring to district court case. By faulty evaluation, the court was referring to the fact that many experts testified as to a doubt that the various diseases actually existed in the patients. In other words, Dr. Koch would claim his treatment cured a patient of cancer, and that tests done after the fact confirm that the patient did not have cancer. However, according to the district court, in the majority of cases, little or no proof exists that cancer actually existed before Dr. Koch’s treatment. Obviously, if no cancer had existed in the patient before the treatment, the juxtaposition of the treatment and the lack of cancer afterwards becomes completely irrelevant.

<sup>61</sup>*Id.* at 319. The appellate court also notes that it was conceded that Koch’s treatments, in the specified dilutions, were harmless. *Id.* It is worth noting, however, that although the drugs may be medically harmless, raising a cancer patient and her family’s hope and denying a patient levels of morphine to deal with pain like Dr. Koch’s treatment called for, certainly harms the patient and her family if and when the treatment turns out to be ineffective.

<sup>62</sup>Also in 1953, a plaintiff in Tampa, Florida was awarded \$65,000 by a jury for malpractice to a patient, due to Koch’s treatment. See California Cancer Advisory Council and Staff, *Cancer, Cancer Quackery, and the Cancer Law* 95 (1965).

... disregards these principles of scientific study and claims “cures” or success in treatment using “secret” drugs. He offers his claims to the public at large and he usually is unwilling to present evidence on his “treatment” to his professional associates in the regular manner for scientific evaluation. Some cancer ‘quacks’ become expert at obscuring this point by claiming bias on the part of the medical-scientific community.<sup>63</sup>

Cancer seems to be particularly susceptible to quackery.<sup>64</sup> A closer look at cancer as a disease may make the reasoning behind this a little clearer. First, fear of cancer is great. Cancer is somewhat mysterious disease that can spread throughout the body with few or no symptoms. While science has had great success in curing many diseases in the 19<sup>th</sup> and 20<sup>th</sup> centuries, cancer remains without a cure. Today, scientists may understand the disease much better than they did 200 years ago, but the best treatment is still chemotherapy, which only works in certain cases and produces serious side effects. The very fact that science has progressed in defining and understanding cancer as a disease while still not being able to cure it, produces fear. In addition, because science has been able to cure many other diseases and ailments that had, in the past, caused death, cancer has risen in the ranks of deadliest diseases.

A diagnosis of cancer, a disease with no easy cure, understandably creates panic in patients. Cancer quacks are able to take advantage of this panic by preying on these confused, scared and vulnerable victims. As Morris Fishbein of the Food and Drug Administration said: “Of all the ghouls who feed on the bodies of the dead and the dying, the cancer quacks are the most vicious and most heartless.”<sup>65</sup>

### *Dishonesty?*

“... there are likely to be ... personality deviations in the classic quack. Dishonesty is one of them.”<sup>66</sup>

It is hard to fathom what motivates a quack doctor, particularly when his “remedy” is being used on patients as vulnerable as those afflicted with cancer. It is possible that the quack is deliberately dishonest, i.e. using a “cure” that he knows to be completely worthless.<sup>67</sup> To knowingly dupe a terminally ill cancer patient for personal economic gain or increased academic prestige is incomprehensible, especially for a well-educated doctor who had other options for success. It seems unlikely that Dr. Koch truly believed his treatment was worthless, but continued to peddle it to the masses. Dr. Koch’s father had died of cancer, and at his second FDA trial, he testified: “I studied medicine for one purpose, and that was to do research in cancer.”<sup>68</sup>

Another trait commonly found among quack doctors is the psychological disorder known as “absence of moral sense.” A person that suffers from this disorder cannot distinguish between true and false, and believes the truth to be what he wants to believe is true.<sup>69</sup> Without doing a full psychological evaluation of Dr. Koch, the second explanation seems to fit the facts and his character better, in terms of dishonesty.

### ***Well-Educated***

“It is simple to explain why a stupid, unprincipled, avaricious man latches onto medical quackery as an easy and lucrative livelihood. But to understand how a doctor of medicine becomes a quack – sometimes after years of respectable, honest, professional activity – would take us into the deep reaches of psychiatry.”<sup>70</sup>

Typically, quacks are good salespeople; they are able to sell whatever product they are touting, regardless of its actual effectiveness.<sup>71</sup> But, not surprisingly, these people are not generally extremely intelligent and well-educated. The case of Dr. Koch is particularly interesting because of his level of education. The above

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<sup>67</sup> *Id.*

<sup>68</sup> Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 268 (1998), citing Koch’s testimony, *U.S.A. v. William F. Koch et al.* in US District Court for the Eastern District of Michigan, Southern Division, FDA Records, 5563 (1946). See also, The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006) (From Koch’s family’s website: “Both his father and his father-in-law had died from this dreaded disease and he did not want this to happen to anyone else”).

<sup>69</sup> California Cancer Advisory Council and Staff, *Cancer, Cancer Quackery, and the Cancer Law* 16 (1965), citing Charles Cameron, *The Cancer Quacks* (1957), published by National Institutes of Health, National Cancer Institute.

<sup>71</sup> See Stephen Barrett & William T. Jarvis, *The Health Robbers: A Close Look at Quackery in America*, “How Quackery Sells” 1 (1993). See also Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 255 (1998).

quote illuminates the intriguing nature of the story of Dr. Koch, who had a B.A., M.A., Ph.D, and M.D., and produced quality research that was accepted by the American Medical Association prior to claiming a cure for cancer.<sup>72</sup> This further supports the assertion in the last section that Dr. Koch suffered from the absence of moral sense.

### *Scientific Proof?*

“There is one thing that all quacks have in common no matter what their intelligence and honesty, no matter what their purpose: they disregard the rules of evidence.”<sup>73</sup>

Quacks do not follow normal rules of scientific experimentation and proof. Clearly, if a person could prove their methods using established scientific standards, they would not be a quack! In the case of Dr. Koch, he believed in experimenting initially on humans, not animals.<sup>74</sup> Rather than partaking in the typical and extensive system of clinical trials, Dr. Koch bypassed all of these safeguards and administered his treatment directly on his human subjects.

Quacks often have a hard time convincing competent scientists and doctors of their claims. In fact, Dr. Koch had many lay and religious believers, and few, though admittedly some, believers who were medical doctors.<sup>75</sup> Koch’s method of testing his treatment on human subjects enabled him to garner support from many lay people. If he had tested animals initially, Dr. Koch’s audience would have only been the medical community, which he would have had to convince of his methods with standard scientific principles. Instead,

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<sup>72</sup>See notes 2-3, *supra*.

<sup>74</sup>See Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 258 (1998), citing Transcript of *U.S.A. v. William F. Koch et al.* in US District Court for the Eastern District of Michigan, Southern Division, p. 9489. (“Koch scorned laboratory experimentation and insisted on testing the remedies developed on his patients. ‘Two-legged mankind,’ he asserted, were his ‘guinea pigs.’”).

<sup>75</sup>See generally, Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254 (1998).

Koch found a way to gain the support of many through a few success stories and word of mouth.<sup>76</sup> Again, he was playing on the fear associated with cancer, and critics hypothesize that many (if not all) of his alleged success stories involved patients that never had the disease at all.

Quacks also often fail to release their evidence and formulas to the scientific community. Koch refused to release the formula for Glyoxylide, claiming:

I did not want to make the formula public just yet, because I fear it might be commercialized. . . If I published it and quacks or unscientific men started mixing it and treating cancer with it, the results would be disastrous. . . When I have proved to the satisfaction of the medical world that it [does] its work, it will be time enough to make the formula public.<sup>77</sup>

While this explanation may be satisfactory to a lay person who is not familiar with the established scientific principles, it would (and did) alert most scientists and doctors that something was wrong with Dr. Koch's work.<sup>78</sup> Dr. Koch's family website also asserts a defense by analogy: Dr. Banting, who engineered insulin, did not reveal all the information on the preparation of insulin until he received his first patent.<sup>79</sup>

### *Claiming Conspiracy*

“The quack tactic of accusing the medical profession of unfairness, collusion, conspiracy, and avarice strongly suggests that quacks suffer from an emotional disturbance known as the persecution complex.”<sup>80</sup>

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<sup>76</sup> See Wallace F. Janssen, *Cancer Quackery: Past And Present* (2005) [Reprinted from FDA Consumer July-August 1977], available at <http://www.cancertreatmentwatch.org/q/janssen.shtml> (last visited April 20, 2005) (“Testimonials – genuine or fabricated – often are the most effective sales ammunition for quack products, and the easiest to obtain. Drugs that work are supported by scientific evidence obtained from carefully controlled tests.”).

<sup>78</sup> See California Cancer Advisory Council and Staff, *Cancer, Cancer Quackery, and the Cancer Law* 15 (1965), citing Charles Cameron, *The Cancer Quacks* (1957), published by National Institutes of Health, National Cancer Institute.

<sup>79</sup> The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.* (2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

Another commonality between quack doctors is the existence of conspiracy theories on the part of the quack and his followers. Again, this commonality makes sense intuitively; the quack must come up with a reason that medical science does not support his theory. Dr. Koch easily fills this quackery stereotype. Koch's family website claims that the American Medical Association (AMA) was fully supportive of Koch at the beginning of his time at the Wayne County Medical Society in Michigan.<sup>81</sup> However, the family claims that as soon as the AMA became aware that Dr. Koch did not intend to share his financial success with the AMA, they closed the clinic, took a stand against Dr. Koch and became the impetus behind the FDA trials of the 1940s.<sup>82</sup>

### ***Straw Man***

Another tactic commonly employed by quack doctors is use of a straw man.<sup>83</sup> For example, a quack doctor claims that another doctor had diagnosed the patient in question with some specified remaining lifespan.<sup>84</sup> The quack doctor would then administer his treatment on the patient. If the patient subsequently outlived the previously declared lifespan, the quack doctor would claim a success story. However, the flaw in this reasoning lies with placing faith in the declaration of the first doctor, i.e., the straw man. When a patient outlives the life expectancy assigned by a doctor, this proves only that the doctor was incorrect about the patient's remaining lifespan. The fact that another doctor intervened with a new treatment in the middle may be the cause of this extended lifespan, but it may also simply be a coincidence. There is no evidence that the first doctor's prediction was correct or even reasonably close to being accurate, and in fact, studies

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<sup>81</sup>See notes 11-12, *infra*.

<sup>82</sup>The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.* (2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006). See also Rochus Börner, Ph.D., *Politics and Suppression in the "War on Cancer"* (2004), <http://www.suppressedscience.net/cancer.html> (last visited April 25, 2006) ("The [Journal of the American Medical Association] denounced Koch as a quack after he refused to sell his protocol to the AMA. At the instigation of the AMA, the FDA put him on trial in 1942 and 1946.").

<sup>83</sup>See generally, Ray Lowenthal, "Cancer Quackery Examined," *the Skeptic Autumn 2001: 17* (available at: [http://www.skeptics.com.au/journal/2001/1\\_lowenthal.pdf](http://www.skeptics.com.au/journal/2001/1_lowenthal.pdf), last visited April 8<sup>th</sup>, 2006) (discussion on straw man theory regarding cancer quacks).

<sup>84</sup>It is irrelevant whether the other doctor did actually make this claim as to the lifespan of the patient. It is not an argument for the quack doctor if another doctor did reasonably and honestly make this diagnosis.

show that doctors are not good at predicting the lifespan of cancer patients.<sup>85</sup>

Both cases involving Koch's believers, described in Part II, *infra*, involve the use of a straw man. One doctor had given Judy McWorter 21 days to live, while another diagnosed Mrs. Fritts with a life expectancy of a few months. The fact that both patients outlived their life expectancies only proves that their initial doctor's diagnoses were incorrect. However, as is typical of quack doctors, Dr. Koch tried to use these original life expectancy declarations as *proof* that his methods worked.

## Conclusion

Shortly after the conclusion of the FDA cases in federal court in 1948, Koch fled to Brazil to avoid further prosecution and alleged persecution. Koch continued to treat patients in Brazil until his death in 1967. Interestingly, Koch supporters claim that Koch was poisoned, resulting in his death,<sup>86</sup> while others claim that Dr. Koch had been paralyzed for five months before succumbing to pneumonia.<sup>87</sup>

It seems apparent that Dr. Koch's treatment was not a cure for cancer, a conclusion which is hardly surprising. However, it is surprising to read about Koch's many devoted followers and to wonder why Dr. Koch himself would shamelessly and devotedly promote such a useless cure, allowing helpless patients to confer hope and financial resources upon Dr. Koch. As noted in Part IV, psychology may be able to

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<sup>85</sup>Ray Lowenthal, "Cancer Quackery Examined." the Skeptic Autumn 2001: 17 (available at: [http://www.skeptics.com.au/journal/2001/1\\_lowenthal.pdf](http://www.skeptics.com.au/journal/2001/1_lowenthal.pdf), last visited April 8<sup>th</sup>, 2006).

<sup>86</sup>The Koch Family, *Scientific Therapy and Practical Research: A Biography of Wm. F. Koch, Ph.D., M.D.*(2003), <http://www.williamfkoch.com/web/version2/biography.php> (last visited April 8, 2006).

<sup>87</sup>Richard E. McFadyen & James Harvey Young, *The Koch Cancer Treatment*, 53 J. OF THE HISTORY OF MEDICINE 254, 284 (1998).

explain Dr. Koch's motivation, but these still leaves many questions unanswered. How many of Dr. Koch's physician "believers" were true believers, and how many hoped to gain financial success by administering his treatment? How many cancer patients died without access to pain medication because of a blind faith in Dr. Koch's methods? Why do people in 2006 continue to believe in Dr. Koch's alleged success stories? Are these people just ignorant and naïve, or is Dr. Koch's family right that there is more to this story that has been suppressed by the FDA and society at large? Unfortunately, Dr. Koch and his treatment died a long time ago, so we might never know the true answers to any of these questions.