

Contesting Expert Knowledge and Toxic Wood: Efforts to Ban Chromated Copper Arsenate (CCA)

Exposure to Toxic Wood

In the winter of 1993 and 1994, Joseph and Rosanne Prager worked on deck, fencing and gazebo projects for their home using lumber ‘pressure-treated’ with the chemical wood preservative and pesticide formulation Chromated Copper Arsenate (CCA)¹. The wood purchased at home improvement warehouses near their home in Gainesville, Florida bore no warning labels noting that the product contained two known carcinogens acknowledged by the U.S. Environmental Protection Agency as toxic and banned in several European countries. Unaware of the dangers of CCA lumber, the couple took no safety precautions while working with the wood despite Rosanne’s pregnancy. Further exacerbating their exposure, the Pragers handled and sawed the wood within their closed garage. Shortly thereafter, the couple experienced acute muscle and joint pain as well as anemia, but failed to associate their ailments with their usage of CCA lumber. In November 1994, the Prager’s daughter was born with a cleft lip and cleft palate. Although these birth defects are typically hereditary in nature, neither partner had a family history of this affliction. The birth defects proved quite severe, requiring numerous surgeries and bone grafts.

A Disturbing Revelation

Several years later, Mr. Prager read an article in his local newspaper about the chemicals used to treat lumber. He suddenly realized that his daughter’s exposure to CCA in utero could very well be responsible for her birth defects. The revelation that the pain experienced by his family may have resulted from a simple home improvement project stunned Prager. Seeking answers, he embarked on an intensive research process. After scouring medical studies conducted in the U.S. and Europe and documents from the Environmental Protection Agency (EPA), Prager found that concerns over the risks CCA posed to public health were not new.

This case was written by Robert Perdue, Department of Sociology at the University of Florida. Funds for the development of the case were provided by the Library of Congress. The case is intended for classroom discussion and is not intended to suggest either effective or ineffective handling of the situation.

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Germany banned the product in the mid 1970's, while the U.S. EPA had begun its Special Review of CCA (RPAR) in 1978 due to "concerns that CCA exceeded the EPA's own risk criteria for fetotoxicity/ teratogenicity (birth defects), oncogenicity (cancer) and mutagenicity (mutations)."² In 1984 this study revealed that wood treated with arsenic posed a risk of birth defects to the animals in their study, specifically *cleft lips and palates*. The EPA concluded the study in 1988 and issued new standards for the use of inorganic arsenicals, reclassifying two of the three components of CCA, arsenic and hexavalent chromium, as 'class A carcinogens' capable of causing birth defects. However, they did not propose any new restrictions on treated wood.

Mr. Prager was furious that these scientific findings had not resulted in the end of CCA production. Moreover, these products came with no warning label alerting consumers to the dangers of handling and using pressure treated lumber. Prager explains his thoughts:

I thought, wow, there are volumes of information on this topic and people don't realize how toxic this product is, because we didn't. And we were fairly bright people, do-it-yourselfers. If we didn't know about it there had to be thousands of other people who didn't know about it too.³

He continued researching the CCA issue, particularly the links between arsenic and birth defects. In the archives of the University of Florida Medical Library, Prager found a "stack" of peer-reviewed journal articles dating from 1968 that concluded arsenic and hexavalent chromium were harmful to fetuses.⁴ With these findings in hand, he sought out the medical community for support, but found little encouragement:

So I was talking to Dr. X, who is a well-known toxicologist and Dr. Y, folks that did environmental toxicology. Trying to get them interested in it. And they kept coming back and saying, 'Well the mother had to consume enough arsenic to kill the fetus', and that didn't make sense to me, 'cause here were all these studies with rabbits and hamsters showing really low dosages in this really critical development period of 8-10 weeks were causing spinal bifida, neural tube defects, cleft lip, cleft palate in all these different animals, lab animals. And that is what you usually use to determine that. So I didn't agree with their desktop, quick assessment and kept writing.

In spite of the dismissive tone of the experts, Prager continued gathering copious amounts of documentation linking arsenic exposure with birth defects.

Contested Illness

Mr. Prager had entered into the world of contested illnesses, where environmental causes of health maladies are subjected to competing claims of knowledge, risk, and causality. Asthma, multiple chemical sensitivity, chronic fatigue syndrome, and Gulf War-related ailments are examples where experts and those afflicted have debated the causes of illnesses, and even the *existence* of their symptoms⁵. These debates often hinge on the scientific credentials of experts and the corresponding lack of formal epidemiological training of the illness sufferers. As such, contested illnesses are essentially disputes over the credibility of arguments.

Trained as an engineer, Prager had no epidemiology, toxicology, or human health sciences background. Nevertheless, Prager was quite certain that the EPA had failed to warn consumers

about the hazards posed by CCA despite their own findings that the compound exceeded EPA risk criteria for birth defects, cancer, and mutations. Further, the well-regarded environmental toxicologists he approached had brushed aside his concerns, while the medical establishment as a whole had failed to realize the significance of the CCA problem. At this point, he faced the question of what to do next. Should he accept the assessments of the medical establishment and ignore the research which explained that there was a correlation between CCA and birth defects? Should he seek out other experts? Should he file a lawsuit? What action could he take as an individual to help bring about the banning of CCA, the main product of a \$4 billion dollar a year industry?

Deciding a Course of Action

Rejecting the infallibility of expert scientific knowledge, Prager decided the best course of action was to continue gathering and *sharing* information with as many people as possible. He reflects on the decision:

Initially, I thought I would write a book, because here I had all this data that I had accumulated about arsenic and birth defects. And after I determined how long it took, what a long process it was to write a book and to get it out on the market, and this was not a profit motivated thing, I wanted to get the information out there, I decided that it would be a lot easier to put up a website. Put the information out there and let other people look at it.

He dedicated his spare moments to creating the website www.bancca.org in order to warn others of the dangers of CCA, to bring victims together, and to lobby for the banning of CCA. The website soon became the preeminent Internet source of information pertaining to CCA, and at its peak had over 15,000 global visitors a month. Wary of lawsuits from the \$4 billion dollar a year wood treatment industry, Prager meticulously documented his findings. Using the Freedom of Information Act (FOIA), Prager accessed many documents that unequivocally linked CCA exposure and negative health outcomes, creating an extensive archive of the hazards of the treatment process and CCA products. Victims now had a forum to share their stories and validate their experiences which, like Prager's, had often been dismissed by the experts. In addition, victim's lawyers and the local and national media relied on the site because of its thorough research.

In seeking answers to the cause(s) of his daughter's mysterious birth defects, Prager had unwittingly become, in the words of medical sociologist Phil Brown, a *popular epidemiologist*, or one of the "lay persons [who] gather data and direct and marshal the knowledge and resources of experts in order to understand the epidemiology of disease, treat existing and prevent future disease, and remove responsible environmental contaminants."⁶ Ultimately, Prager claimed the status of an expert by the quality and quantity of his research.

Due to his research and status as a victim, the environmental group Beyond Pesticides invited Prager in 2002 to join them in a lawsuit against the EPA for its delay in warning the public about CCAs, despite the decades-old evidence of its danger. It was not pressure on the EPA, however, that would facilitate the EPA's eventual ban on CCAs, but rather the media coverage and consumer awareness Prager fostered with his website. The media highlighted the dangers posed to children through exposure to CCA treated playground equipment, spurring increased

consumer concern and further media coverage. Facing a rising tide of consumer resistance, industry leaders approached the EPA in 2002 with a plan to voluntarily phase out the production of CCA wood for residential purposes. On January 1, 2004, the EPA's ban on the manufacturing of CCA wood came into effect and CCA wood is no longer available to consumers; however, it is available for industrial purposes.

After this national level success, Prager's mission to protect others from the dangers posed by CCA seemed to have been accomplished. However, the ban on CCA wood pertained to *residential* uses only. Ironically, a major producer of *industrial* CCA products, Koppers Inc., continued to operate on a Superfund site in the center of his city of Gainesville, Florida, the same company who treated the wood that may have been the source of his daughter's illnesses. Paradoxically, efforts to ban CCA production on the federal level had been met with great success, while local efforts were stagnant.

Cabot Koppers The Local Postscript

Cabot Carbon began making charcoal and wood products on a 170-acre parcel of land in the city center of Gainesville in 1916. Cabot has ceased operations and the eastern portion of the site is now home to a shopping center. On the western portion of the site, Koppers Inc. continues operations despite the EPA's 1983 declaration that the site was so contaminated by these two companies that it warranted federal clean-up funds (Superfund), and placed it on the National Priorities List (NPL). Nevertheless, the company's treatment of hundreds of wooden utility poles and aquatic moorings with CCA daily is permissible according to the industrial usage clause of the 2004 federal ban. Delaying further clean-up, Koppers Inc. dries its utility poles in the open air of their lot, which, according to the EPA, leaches arsenic, chromium, and over three dozen other "contaminants of concern"⁷ into the ground, nearby waterways, and underground aquifers. The EPA has concluded that at the site, "contaminated ground water migration is not under control" and the Floridan Aquifer, the water supply for Gainesville and much of the southeast U.S., is in danger of arsenic contamination⁸. In addition, chemical laden "fugitive dust" escapes the plant grounds into bordering neighborhoods and rainwater leaving the contaminated site enters local creeks. The director of the Alachua County Environmental Protection Department compares attempts at remediating the site while operations continue to "trying to make a bed while someone is sleeping in it."⁹

For his part, Prager is again questioning expert knowledge and science. In his role as the Vice Chairman of the citizen-run Environmental Protection Advisory Committee of Alachua County (EPAC) from 2005-2008, Prager focused EPAC on the Cabot/Koppers Superfund site and served as the "CCA go-to-guy." He petitioned the Florida Department of Environmental Protection (DEP) for the mandatory stormwater reports detailing the runoff from the site. The reports revealed that the arsenic and copper levels leaving the site exceeded the permit thresholds by 8 and 18 times respectively.

More recently, at a joint city/county meeting devoted to the future of the site, Prager questioned the sampling methodology used by corporate representatives, which found low levels of

contaminants along the property boundary.¹⁰ Using the guidelines of the Florida Department of Health (DOH), he highlighted how soil samples taken from the top six inches of the ground by the company representatives would inevitably be diluted, rendering results less valid and much more innocuous. According to the Florida DOH, 0 to 1 inch soil samples should be taken in contaminated areas because people are more likely to come into contact with this soil, rather than soil sampled at three inches.

Typically, the Florida DOH estimates the likelihood of illness *from exposures to the top three inches of soil* since people are most apt to come into contact with the top layer of soil during daily activities. *In absence of data based on 0-1 inch samples, Florida DOH cannot be sure of the actual exposure.* (emphasis added)¹¹.

The EPA's recently released Cabot-Koppers feasibility study (8/31/2009), which outlines the agency's proposed clean-up strategy and the difficulties faced in the remediation of the site, was also severely criticized by Prager. The release of such studies by the EPA are intended to instill trust and symbolize open communication with afflicted communities, but in an open letter to the EPA, Prager pointedly questioned the samples the feasibility study is based upon:

Risks to human health are being downplayed in the Human Health Risk Assessment (HHRA), the other 467 page report by AMEC upon which the entire Feasibility Study is based. But, new onsite soil samples, detailed in a report to EPA's Scott Miller dated Sept. 29, 2009, show extremely high levels of toxins, including arsenic, benzo(a) pyrenes (BAPTE), dioxins (TCDD- TEQ), mercury and pentachlorophenol, in the northern portion of the Koppers site that abuts the residential lots along NW 33rd Avenue between NW 4th St and NW 2nd St. One sample in particular (Sample SS-104AA) shows a dioxin level that exceeds the Florida Residential Soil Cleanup Target Levels for dioxins by 24,377 TIMES!¹²

Prager further questioned the validity of the report's methodology and its reliance on "best case" scenarios:

The HHRA uses models and data that are so "statistically fragile" that a change in any variable would cause the entire result to have to be recalculated and reinterpreted, particularly with regard to the risk to Koppers employees onsite. For example, the present model only accounts for one female Koppers employee, and if more female employees were to work at Koppers, it would no longer be valid. Other questionable assumptions include that the typical Koppers employee only works at Koppers for 6 months (which is hard to believe, yet easy to confirm); that the typical worker is only exposed to the highly toxic areas for at most 2 hours on a given day (does the worker who mows the site stop after 2 hours exposure time?), and so on. Such compounded "best case" assumptions render this entire HHRA into an exercise in statistical absurdity. If we can so easily find these flaws, why was the HHRA not scrutinized by EPA staff before it became part and parcel of the feasibility study?¹³

These rebuttals of expert knowledge are examples of Joe Prager's commitment to questioning the scientific assumptions that ultimately affect the health and safety of his community. He was, however, not alone in this local fight. Numerous Gainesville residents, particularly those of the Stephen Foster neighborhood abutting the Koppers Inc. facility, pointed out the high rates of cancer afflicting both humans and animals in their community. Others volunteered to submit to blood and hair tests to determine the levels of their exposure to arsenic. These concerned citizens began to take direct action, holding rallies in front of the Koppers facility, speaking out at civic meetings (with the mantra of, "Cancer No, Koppers Go!"), and generally attempting to bring the issue to the attention of the entire community.

Despite efforts of concerned citizens, attempts to stop the use of this federally banned substance were met with limited success. Although the site was placed on the National Priorities List for Superfund clean up over 25 years ago, little remediation has occurred, while Koppers Inc. exacerbates the situation with its continued operation. Prager, reflecting on the state of this Superfund site, voiced the frustration of those involved in the struggle to rid Gainesville of the toxic source affecting the community:

“Ultimately, it seems to me that this issue will not be resolved until Koppers either 1) sells out and closes, or 2) closes their plant of their own accord, or 3) are closed down by the EPA, which should have happened years ago when the Superfund site designation occurred. WHY that closure never happened is beyond me. But no real cleanup or remediation can occur unless and until that closure happens”.¹⁴

Remaining Questions

Contesting expert knowledge yielded great returns at the national level, evidenced by the banning of CCA for residential usage. However, in the local case the experts (the EPA) have unequivocally concluded that the site is toxic and endangers the community’s water supply, yet little remediation has occurred in nearly three decades. Ultimately the timeframe and level of remediation at the site is the responsibility of the EPA. However, the responsible corporate party, Beazer East, holds great sway over the clean-up, particularly the level (residential, industrial etc.) that they contend is possible¹⁵. Local governments have little influence over the decision making process and cannot force Koppers Inc. to clean up the toxic site. Negotiating the tangle of corporate power, federal regulatory bureaucracy, and local government is proving exceedingly complicated and frustrating for local activists. They are still trying to determine how to bring about the changes they deem crucial for the safety of all residents of Gainesville.

Endnotes:

¹ The majority of the information found here is derived from the website www.bancca.org and personal communications with Mr. Prager.

² www.bancca.org

³ Unless otherwise noted, quotes are from personal communication, August 28, 2009.

⁴ For instance, Ferm, Carpenter. (1968), "Malformations Induced by Sodium Arsenate", *Journal of Reproductive Fertility*, Vol. 17., for annotated bibliography of studies see http://bancca.org/Health_Hazards/CCA_Health_Hazards.htm#Sect_2_1_8

⁵ See, Dumit, Joseph. (2006). "Illnesses you have to fight to get: Facts as forces in uncertain, emergent illnesses." *Social Science & Medicine*, 62, 577-590.

Brown, Phil et al. (2000). "A gulf of difference: disputes over Gulf-War related illnesses." *Journal of Health and Social Behavior*, 42, 235-257.

⁶ See Brown, Phil. (1992). "Popular epidemiology and toxic waste contamination: Lay and professional ways of knowing." *Journal of Health and Social Behavior*, 33, 267-281.

⁷ <http://www.epa.gov/Region4/waste/npl/nplfln/cabkopfl.htm#progress>

⁸ Ibid.

⁹ Gainesville Sun, January 1, 2009. "Tests: Runoffs from Koppers Contains Chemicals"

¹⁰ Beazer East assumed financial responsibility for the contamination in 1988.

¹¹ Part of statement given by Prager at Joint Alachua County/City of Gainesville Meeting, Aug. 31, 2009.

¹² www.bancca.org/, [BANCCA.ORG's Open Letter to the EPA on the Koppers Superfund Site Feasibility Study](#)

¹³ Ibid.

¹⁴ Personal communication with Prager, Sept. 2, 2009.

¹⁵ The remedial process for a Superfund site allows for the primary responsible party to be heavily involved in the decisions related to the cost of the clean-up. In public meetings a spokesman for the responsible party, Mr. Mitch Brouman, has stated that at other sites responsible parties have opted to merely erect a fence around the property.