

The Three Faces of Dow

Understanding Dow Chemical's environmental change of heart

If there was a moment during my research about the Dow Chemical Company when I felt at last that I understood how to judge the "great things" this corporation claims for itself, it came while watching television. You could have seen that video moment for yourself, but only if you'd driven to Dow's hometown — the small, quiet city of Midland, Michigan, 100 miles north of Detroit.

Visiting Midland is like stepping into a Frank Capra movie: prosperous streets, conservative clothes, cheerful fellowship. Dow Chemical, where a quarter of the city's working residents draw their paychecks, has hardly ever laid anyone off, not even during the Great Depression. It (and the Dow family) have built some spectacular public works in Midland ... a terrific library, a nature center, a replica of the original Dow plant from 1890, and an array of buildings inspired by Frank Lloyd Wright. (Alden Dow, son of the chemical company's founder, was a Wright protege.) Then there is the scenic overlook, the panoramic view of a 1,900-acre erector set built of pipes and pumps — the Dow Michigan



PILOT (V.O.): Piloting a corporate jet for Dow can be interesting and rewarding.



The Corporate Angel Network uses empty seats on company business trips...



... to fly cancer patients who need specialized treatment. Patients like Christy.

chemical plant across the river.

In Midland I sat at an editing deck in the community TV station, to watch an August '90 episode of a local talk show called "It's Debatable." One guest was Karl Kamena, director of government affairs for Dow's plastics division, promoter of plastics recycling as a solution to the American landfill problem. Soft-voiced and deliberately earnest, he looked (on TV, at least) like Joe DiMaggio; local environmentalists privately consider him one of Dow's most self-assured and condescending debaters. His opponent, Mark Adams, was the 30-something co-founder of the Waste Oil Action Committee, a local environmental group. With curly dark hair and a flowered tie, Adams came across like Doonesbury's Mark Slackmeyer: He introduced himself by tossing a polystyrene clamshell across the table.

I had little hope at first for "It's Debatable." It's hard to say which was more irritating: Kamena's ponderous lecture on how "Styrofoam" is a trademarked name, or Adams' street-theatre-esque interruptions: "This clown Ronald McToxic may fool the children, but he's not fooling most of the adults out here." But then, about halfway through the program, Adams changed course. Holding up a report from the Michigan State packaging program, he asserted that polystyrene coffee cups leach chlorine into hot drinks. It was the first moment in the show when any outside evidence had been introduced.

"I'd be happy," said Kamena, "to have our people take a look at these studies."

Adams deftly took the opening. "If Dow found that these reports are in fact true," he asked, "would they stop producing polystyrene packaging?"

"If we found that polystyrene was causing a human health problem,"

BY ART KLEINER

said Kamena, "or an environmental problem that couldn't be controlled..." — he paused — "why would we want to produce that product?"

In their hearts, it appeared, both sides wanted the same thing: an end to poison. The environmentalists I'd met were technically savvy and reasonable. Dow's executives were fiercely moral, committed to good faith in a way I'd rarely encountered as a business reporter. A Dow executive named Dan Fellner had actually sought me out at **GARBAGE**, and invited me to Midland to investigate them, not knowing that for two years I'd been gathering information about the company. In this moment on TV, I believed Kamena: If Dow found out that polystyrene was toxic, in an era when such knowledge can't be covered up, why would they want to make the product?

But Mark Adams had an answer for that, too. Depending on your point of view, his answer either hit below the belt, or got to the heart of the tense contradictions under the veneer of corporate environmentalism. Why make poisons? "For the same reason," he said, "that Agent Orange was produced."

Dow Chemical is a company haunted by its identities, past and present, of which there are at least three. First, there is the "traditional" Dow: the frugal, small-town chemical company founded a century ago. In this Dow, science is a calling in which one steepes oneself, as others are dedicated to art, politics, or religion. It's a collegial company, close-knit and egalitarian, where chemistry PhDs stay from college until retirement, where everyone eats in the same cafeteria, and where the toxicology lab dates back to the 1930s. It's the Dow whose corporate ethic says that science is responsible for quality of life, and that empirical evidence is

the basis for wisdom.

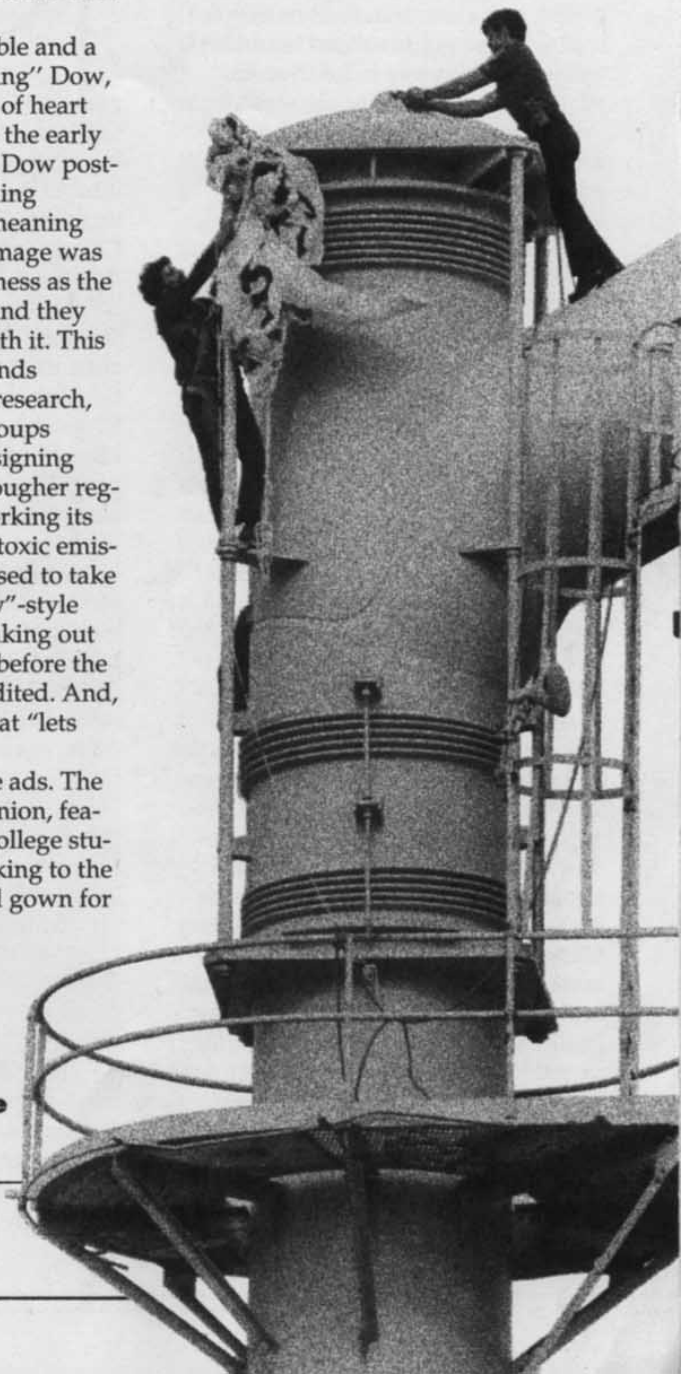
But there is also the "antagonistic" Dow — the Dow of napalm and Agent Orange. This is the Dow that bitterly fought Oregon housewives and Vietnam veterans over herbicide sprays, and still denies the links between those sprays and cancer. In the 1970s and early 1980s, this Dow stonewalled information requests and pulled funding from a local university because Jane Fonda spoke there. And this is the Dow which, even today, gets accused of backroom politics and dirty tricks.

The third Dow is admirable and a little clumsy. It's the "learning" Dow, the company with a change of heart about environmentalism. In the early 1980s, the executives of this Dow posted signs in their offices reading "Perception is Reality" — meaning that the company's public image was as much a part of their business as the periodic table of elements, and they had better come to terms with it. This is the Dow that funds wetlands preservation and recycling research, that consults community groups about new plants before designing them, that has lobbied for tougher regulatory standards and is working its way towards a goal of zero toxic emissions. It's the Dow that refused to take part in the hype over "Hefty"-style biodegradable plastics, speaking out on the technical flaws even before the bags were popularly discredited. And, of course, this is the Dow that "lets you do great things."

You may have seen those ads. The most memorable, in my opinion, features a strawberry-blonde college student with a strong jaw, walking to the graduation stand in cap and gown for her diploma. "When I was growing up," she says in

In 1985, Greenpeace tried to unfurl a banner atop Dow's styrene monomer tower.

voice-over, "Mom and Dad taught me that we've only got one planet." (Cut to her beaming parents.) "And we'd better take care of it," she continues. "Now, I'm about to join a company that's committed itself to helping people preserve our wildlife, and to finding new ways to protect the Earth." As the theme music blares, she turns passionately to the camera and delivers her last words with fierce determination: "I can't wait." The lyrics rise in counterpoint: "You can make a dif-



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ference in what tomorrow brings, 'cause Dow lets you do great things."

It's easy to poke fun at the ads, or to give them the New York deconstructionist treatment, as *Esquire* did last October. Their writer, Mark Crispin Miller, accused Dow of trading on 1960s-style images (like a bumbling, sitcom-style father at a company softball game) to co-opt the idealism of young people who don't remember napalm. Even Miller, however, didn't notice that the spot with the graduate had been aired with an anti-hunger voice-over six years earlier. Back then, she was "about to walk into a Dow laboratory, to work on new ways to help grow more and better grain for those kids who so desperately need it." In other words, the environmentalist of '91 was preparing to make pesticides in '85.

OK, the ads are arrogant. ("Dow lets me do great things," snapped Diane Hebert, one of the company's prominent local opponents. "How generous.") Yet despite the cynicism the ads engender, the true weakness of the "great things" campaign is ironic: Its slickness makes the company seem worse than it actually is.

In reality, the three Dows — the traditional, the antagonistic, and the learning Dow — co-exist. The tension among them, coupled with the small-town atmosphere, allowed emotions to rise where they might have been held back in other companies. Dow is like every company pursuing and wrestling with environmentalism — only more so.

In a phone interview two years ago, I lobbed a soft question at Keith McKennon, then the president of Dow United States: "Even if your environmentalism is just a cosmetic public-relations effort," I asked, "isn't that in itself a major change?" His normally genial voice bristled in a way that made me think he'd been struggling with the question himself. "If it's a change of rhetoric only, it's worthless," he said, "no matter how remarkable you may think it is."

No place in Michigan is more than eight miles from a lake; the state has more coastline than Florida or California. It's been an environmental-savvy place since the 1890s, when lumber companies finished stripping its white pine forests (partly to rebuild Chicago after the Great Fire). About that time, Herbert Dow came to central Michigan, drawn by its salt brine marshes. Dow was a 24-year-old chemist, a slim young entrepreneur in the Horatio Alger mode, with a Teddy Roosevelt moustache and a fondness for solitary exercise like wood-chopping. Dow had invented a method of electrocharging brine water, extracting bromine for photographic emulsion and chlorine for bleach.

Dow believed in making use of waste. Many Dow Chemical Company products came from leftover brine derivatives: soldering flux, Epsom salts, carbon tetrachloride, dyes, pesticides, agricultural sprays, and aspirin. Dow began making plastic in the 1930s, and sold its first consumer product in 1953: Saran Wrap. In '44, Dow chemists invented Styrofoam (an insulation plastic); the burgeoning styrene family, whence polystyrene cups and clamshells come, also has its roots in Midland. As with most U.S. companies, World War II dramatically boosted Dow's business: Saran Wrap was first used to keep American military equipment dust-free.

The traditional Dow got its first jolt during the Vietnam war, when protests targeted the company as napalm profiteers. Dow's executives replied,

in effect, "Blame the military, not us — we merely sell one of napalm's ingredients." They stopped selling even that in 1969, but the baby-killer image persisted — helping prod the antagonistic Dow into existence.

The "learning Dow" may have been born during a speech given by then-Chairman Carl Gerstacker in 1966, at a water-pollution conference convened in the aftermath of Rachel Carson's *Silent Spring*. Gerstacker said that most CEOs probably didn't know how much pollution their companies were producing (a suspicion borne out with the Community Right-to-Know Law of 1986). He tentatively implied that most CEOs didn't care, and proposed three measures which most companies haven't adopted even now: sharing knowledge on pollution control, reducing waste at the source, and enlisting the help of everyone in a factory. Soon afterwards, Dow began its "product stewardship" program, refusing to sell industrial products unless buyers met their safety and environmental standards.

In 1969, a Dow-owned chlorinated waste pit flooded onto a Louisiana grazing area. When cattle died, the resulting lawsuit "was the beginning," says Jerry Martin, Dow's director of U.S. environmental affairs, "of our commitment that we weren't going to put that stuff in the ground any-



Now, I'm about to join a company that's committed itself to helping people preserve our wildlife. . .

more." During the next decade Dow began phasing out of landfills and deep-well injection storage (where wastes are plunged one or two miles down into salt-water aquifers).

Twenty years later, they had comparatively few Love Canal-type sites to clean up. (For instance, there is no Superfund site in Midland.)

Ironically, Dow had been the most vehement major chemical company lobbying against Superfund. The antagonistic Dow gained dominance around 1974, spurred by the company's fiercely anti-regulation new CEO, Paul Orefice. In one celebrated 1978 case, some frustrated EPA staffers hired a pilot to take aerial photographs of Midland smokestacks for a Clean Air Act survey. The chemical company sued the EPA for trying to learn its trade secrets. "I think by and large," Jerry Martin says, "we thought we were doing the right thing environmentally. There was an internal belief that what we did was our business and nobody else's."

The antagonistic Dow began to feel the effects of the ill will in the late 1970s. Cancer complaints from exposure to herbicides — particularly 2,4,5-T and 2,4-D, as well as Agent Orange, which is a mixture of both of them — began to hit the courts and newspapers. One chronology of Dow-related health scares between 1974 and 1983, privately compiled by a former Michigan Department of Natural Resources staffer, takes up three sin-

gle-spaced pages. A group representing 4,000 Vietnam veterans took a \$180 million Agent Orange settlement in 1984. A community in Globe, Arizona, claiming that Forest Service spraying of 2,4,5-T had triggered miscarriages and illnesses, fought Dow in court for eleven years. The company settled, admitting no liability, in 1981. A similar spraying case in the Alsea Valley in Oregon triggered a federal prohibition of 2,4,5-T. Dow sued the EPA over the prohibition, and finally dropped the suit in 1983.

Inevitably, the concern reached Midland. In 1978, Dow scientists found traces of dioxin (a chemical family of chlorine-based contaminants which included the toxic substance in Agent Orange) in the Tittabawassee River, which flows through Midland into Lake Michigan. Larry Fink, an analyst at the Michigan Department of Natural Resources (DNR), checked local cancer statistics and found they had increased during the 1970s to four times the national rate. Fink tried to block a Dow water-disposal permit until a complete epidemiology could be performed. (As it happens, the epidemiology came out only this February. It found no abnormal illness rates — a question we'll return to.) Meanwhile, other activists matched records of spills from Dow brine wells against local cancer complaints, instigating controversies over dioxin in the groundwater. Finally, in 1982, an EPA staffer leaked the fact that Dow had

critiqued an EPA report before publication. This triggered a Congressional investigation. TV cameras descended on Midland.

It was a remarkably frustrating series of events for both sides. I've talked to seven or eight Dow executives, including some speaking off the record, who say dioxin was a technical non-issue;

they had studied their own workers' cancer rates and found them lower than in the general population; and if that were true, how could the public be at greater risk?

Nor did local department of health records show an increase in cancer.

Dow's point man then was David Buzzelli, now the corporation's chief environmental officer. Buzzelli was an outdoorsman himself, a member of Ducks Unlimited — a genial man with arched eyebrows, a solid physique, and an emotional tie to the dioxin issue. His job at Dow before environmental affairs had been running their manufacturing operation. A few days after he had taken that job, Geraldo Rivera had "ripped Dow and our herbicide 2,4,5-T up one side and down the other on 20/20. So, here I was telling my wife, 'Isn't this an exciting challenge?' and I turn on the television and someone is taking a knife to my baby." Buzzelli wasn't the only Dow staffer to feel that way; many Dow people were tempted to see the hubbub as leftover napalm-bashing, especially since out-of-towners seemed to be raising all the commotion. "The company I knew," he said, "wasn't the company the public saw."

But the dioxin controversy was not a good way to prove it. No one disputes the immense toxicity of dioxins, or the fact that they linger in living tissue. But the threshold amounts (Dow measured its emissions in parts per trillion, and claimed the concentrations were too small to be dangerous), the degree of carcinogenicity, and the triggers of health effects are still under fierce debate. Untangling the truth about dioxin has been beyond the American scientific establishment for



... and to finding new ways to protect the earth.
SING: Yes, you can make a difference...



HER (V.O.): I can't wait.
SING: 'Cause Dow lets you do...

Typical Midlanders hadn't had much use for Greenpeace people, who were seen as hippies and hypocrites (some of them smoked cigarettes while preaching about cancer from dioxin).

more than 15 years. But it's an emotional issue.

Then, in Midland, there were stories of mysterious ailments, often among people who felt afraid to protest too loudly in a company town. Diane Hebert (pronounced Eh-Bear), who came to public prominence by raising the brine-spills issue, says she often fielded late-night calls about chemical leaks. "It might be ten o'clock, and someone tells you that their child died of a rare heart defect (and they lived in an area where you know the water's bad), and both their in-laws died of pancreatic cancer and so did the dog, and what do you say? You keep responding."

Television news crews found Hebert, who is petite with fluffy blonde hair, photogenic; they would interview her curled up on her couch, looking and talking like a likable flight attendant (which she once had been). But that image was deceptive; she had the persistence to spend hours in file-rooms at the Michigan DNR, looking for contradictions, and the cogency to articulate them. Judging from newspaper clippings, that articulation became increasingly persuasive.

Many Midland people supported Dow; they still performed, ostentatiously catching fish from the river, for TV news. But support dwindled to its lowest point during the final "significant emotional event," as Buzzelli later called it. In the spring of 1985, a team of Greenpeace members, trailed by TV cameras, paddled into the Tittabawassee on inflated rafts to plug Dow's discharge pipes. After several days, they were arrested; in a county jail bloodtest, a 27-year-old Greenpeace staffer named Melissa Ortquist tested positive for syphilis. (Later tests near her home in upstate New York contradicted the results.) That week, a Dow public-relations executive made the mistake of calling Diane Hebert and telling her that Ortquist "had V.D."

Typical Midlanders hadn't had much use for the Greenpeace people, who were seen as hippies and hyp-

ocrites (some of them smoked cigarettes while preaching about cancer from dioxin). But when the news broke about Ortquist, that was different. The "traditional" Dow was not supposed to indulge in cheap shots. Moreover, the incident raised a disturbing question: If Dow could get past privacy laws to see those test results from the Midland health department, did that mean the company could see — and possibly edit — county health statistics? Letters asking that question began to appear in the *Midland Daily News* (along with a full-page apology to Ortquist from the Dow chairman).

Dow had antagonized regulators for years, but never before most of its neighbors. Now people throughout the company pressed for a change in behavior. And other influences surfaced within the company. The company was moving "downstream," abandoning its pure bromine manufacture entirely, and making more consumer products. Marketing people worried about boycotts of Cepacol, Fantastik, and other consumer brands that Dow had recently acquired. The "Perception is Reality" signs went up; the "great things" ads were planned. David Buzzelli, already seeking alternatives to antagonism, became president of Dow Canada, where he joined that country's business roundtables, inspired by the U.N. Brundtland Commission's promotion of sustainable development. If environmental quality and economic growth depended on each other, then (the Canadians felt) business people and community leaders should meet to find common solutions. Other Dow executives, finding themselves in an ongoing

give-and-take with environmentalists, began to listen to them. When Orefice moved to board chairmanship in 1985, he was replaced as CEO by the Bulgarian-born Frank Popoff; Popoff's environmental speeches were perhaps the most obvious signal that a change had begun in the company.

If the learning Dow has done nothing else, it has instilled a fervor about environmentalism in its home town. The 1990 Midland Earth Day festivities (funded and abetted by Dow) involved 20,000 people, one-third of the county's residents. There's a well-funded Midland community recycling center, and an extensive office-paper recycling project; during my Midland visit, I watched David Buzzelli ceremoniously don a t-shirt and shovel the one-millionth pound of Dow office paper into a recycling truck. Dow's recycling enthusiasm may have begun as public relations, aimed at staving off bans on polystyrene (a "great things" ad last year showed backpackers cooing over a plastic-lumber park bench). But to its credit, the company has focused its recent recycling efforts into research — on collection and processing of such heretofore nonreusable substances as coated magazine paper and Saran Wrap.

As for Dow's recent openness with information, some of that is mandated by law, particularly the 1986



SING: You're on your way . . .
SON: . . . so in my interview they told me Dow has a way to take . . .

“Community Right-to-Know” Superfund amendments. But Dow can take credit for going beyond the law in several ways: making its local plant managers, instead of P.R. people, work closely with community groups, for instance. The company which once sued the EPA for flying overhead now volunteers facts. Candor is typical of the dozen or so Dow people I’ve interviewed during the past three years.

Still more significantly, the company has embraced the once-heretical ideas which Gerstacker suggested back in 1966, particularly the concept of reducing waste as deeply within the manufacturing process as possible. Previously, when the EPA set an emissions limit, Dow (and other companies) would strain, scrub, filter, or dilute its pollutants so they fell below that level. When a group like Greenpeace pushed for “zero discharge,” Dow scientists retorted that perfection was an impossible goal. The idea drowned in semantic posturing. But it turns out that constant improvement, year after year, does much more to reduce pollution than merely targeting an “acceptable” amount of waste.

Waste reduction can’t help but promote employee involvement throughout a company. The methods involve powerful statistical-measurement techniques that require people at every level to monitor and understand their emissions. Dow, already somewhat egalitarian, was a natural for this. The company publishes an impressive list, compiled by their

Louisiana-based energy engineer Kenneth Nelson, of ninety pollution-cutting improvements suggested by Dow staffers. They’re nitty-gritty ideas: redesigning the shape of catalytic converters so chemicals flow more evenly; installing corrosion-resistant pipes; or simply working with their chemical suppliers to get purer raw materials. Called “Waste Reduction Always Pays,” or WRAP, the program convinced the hardliners within Dow: Not only did the corrosion-free pipes eliminate the need for a hydrochloric-caustic cleanser (which would then be discharged), but it also saved \$890,000 a year.

In 1984, Dow released about 10.5 million pounds; by 1988, their annual Michigan emissions had been cut in half. And the figures continue to go down; though they’re the second-largest chemical company, the EPA ranked them 29th in total emissions this year. But is that enough to give Dow ecological credibility? A local activist named Terry Miller showed me those Michigan figures, and then said he was skeptical of them. Borrowing an argument from Barry Commoner, he said: “The only environmental successes occurred when we legislated certain pollutants, like DDT, out of existence. ‘Waste reduction’ justifies the current line of products, simply by saying ‘We did better than we did last year.’” By this argument, if Dow really wanted to prove itself environmentalist, it would do what Paul Connett of St. Lawrence University suggests — eliminate all products made of chlo-

rine. (Why chlorine? Because it is rarely found in organic life, it resists biological decay, and its toxicity builds up over time as it accumulates in fatty tissue. It was too bad, Connett says, that nobody talked to Herbert Dow in the early days and said, “Nature doesn’t exploit this chemical. What are the long-term ramifications of your exploiting it?”)

Arguing this point leads inevitably into the swamp of comparative risk. Lead-free gas uses chlorine; would leaded gas be better? Sheet metal requires chlorine cleaning; should we revert to wood vehicles? No doubt you’ve heard such debates, which seem to founder because we don’t know many long-term comparative effects of products. We lack comprehensive data.

That’s where Dow and other companies could contribute — as Larry Fink, the Michigan DNR gadfly from Dow’s antagonistic years, pointed out recently. He talked about the inconclusiveness of research on chemical hazards. Industry lobbyists claim (quite reasonably, Fink said) that cancer in a laboratory animal means little; humans may not react the same way as animals. But the only alternative, epidemiology, has been undermined by chemical companies (including Dow) which have standard non-disclosure clauses in their legal settlements.

“If Dow wanted to show they were really upfront,” Fink said, “they would put that information, without names, into a public database on patterns of toxicity.” Such a data bank might include exposure records from the old dioxin lawsuits, Dow’s studies of its own workers, independent surveys like the one just released in Midland, and statistics from the National Cancer Society. No profit-making company, not even the “learning” Dow, could be trusted to come up with this data on its own; but any data compiled *without* Dow’s full-hearted participation, especially with its toxicological knowledge, would be inconclusive.

In Midland headquarters, such ideas might not be so unthinkable.



... all this coal and turn it into clean burnin' gas.
DAD: Wouldn't that cut down on acid rain?



DAD: Sounds like one serious job, son. I just wish it wasn't so far away...