HARD TO STOP A TRAIN

Why ignorance and denial will wreck the water supply of the Virginia Coastal Plain

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One day in 1,250 B.C., after ten years of war between the Greeks and the Trojans, the Greeks abruptly ended their siege of Troy. Their fleet sailed out into the Aegean Sea, leaving behind a large wooden horse. The Trojans were convinced that the horse was a holy offering, so they began hammering out a hole in the city wall large enough to allow entrance of the horse.

Cassandra—the daughter of the king of Troy, Priam—scolded her countrymen for their recklessness and warned them that the horse was a trick that will bring ruin to Troy. The Trojans ignored her warning and pulled the horse inside the city. That night, a band of Greek warriors spilled from the horse and opened the city gates to admit the rest of the Greek army, which had hidden in the surrounding hills. The Greeks then slaughtered the unsuspecting Trojans and burned the city to the ground.

I was reminded of this tale the other day as a reviewed the scientific evidence that warned of the threat to the water supply of the Virginia Coastal Plain: growing water withdrawals, aquifer overdraft, falling artesian water levels, shrinking groundwater storage, increasing extraction and treatment costs. Clearly, our current water supply practices are unsustainable and, if not reformed, will lead eventually to a social and economic crisis. We are riding a runaway train. Where is the public outcry? Where are the protestations of the media and the mainstream environmental organizations? Where is the civic responsibility of public officials? As Cassandra discovered, it takes a lot to persuade human beings of an impending disaster.

Some experts place the blame for this kind of dysfunctional behavior on evolutionary biology. "Human beings are hard-wired to believe in their heart and soul that disasters don't happen and won't happen to them," says Dennis Mileti, a retired University of Colorado professor. Our brains. it seems, evolved to deal with the frequent, acute, and local threats that we faced as hunters and gatherers in small groups. They aren't designed to grasp rare threats of regional or global dimensions. Presumably, we humans could respond successfully to a simple frontal assault by a sabre-toothed cat, but we are incapable of contending with complex and chronic threats like climate change--or groundwater depletion. We can't expect "to solve a problem we're not built to solve," UCLA evolutionary biologist Jay Phelan has written.

It is difficult for us to wrap our minds around possible events that lie far in the future and outside of our experience. This is particularly true when the enormity of the events is unprecedented and when we can do little to influence the outcome. The Australian author Clive Hamilton wrote, "Sometimes facing up to the truth is just too hard. When the facts are distressing it is easier to reframe or ignore them."

This shortcoming afflicts even professional scientists. No meteorologist eagerly predicts the most powerful hurricane on record, and no seismologist eagerly predicts the most destructive earthquake in history--even if scientific facts support such dire forecasts. In game theory, events of very low probability but very high magnitude, like a 500-year storm or 10.0 magnitude earthquake, are termed *zero-infinity* events. Despite their great destructive power, no society prepares itself adequately to escape their catastrophic consequences.

Moreover, humans will not accept the reality of a social or environmental problem unless they see that other persons are acting in a manner that reflects its seriousness. They will wait for

others to act and then join in the collective action of the group. "Surely," goes their reasoning, "if the problem is really that serious, then someone would be doing something about it." The environmentalist George Marshall observed, "People will never spontaneously take action themselves unless they receive social support and the validation of others."

All of the blame for the failure to understand the threat to the water supply of the Virginia Coastal Plain and to take timely action to protect it cannot be laid at the feet of Charles Darwin or Margaret Mead, however. The water supply problem is inherently complicated. A clear understanding of it involves quantitative scientific language, principles, and methodologies unfamiliar to most persons. What's just as bad, the harmful changes in the groundwater supply are taking place out of sight, deep within the earth's crust. (Water users pump more than 120 million gallons of water a day from the artesian aquifers of the Virginia Coastal Plain.) Finally, these changes are occurring slowly, over decades and centuries.

As a result, the average citizen, as well as policy makers, must rely on professional scientists to determine the facts of the water supply and draw conclusions about its future. Often, firmly-held beliefs of many persons are at odds with the verdicts of scientists about important environmental problems. In these persons ideology trumps rationality. As Paul Krugman, the columnist for The New York Times, wrote recently, ""[M]y biggest misconception was this: I actually believed that influential people could be moved by evidence, that they would change their views if events completely refuted their beliefs."

For reasons discussed above, the long-term and complex threat to the regional water supply is not likely to end well. Both ignorance of pertinent facts and denial of ultimate peril by citizens and policy makers alike have put us on track to a water supply crisis, and I am not sanguine about outcome. It's hard to stop a train.

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