

SURPRISE, SURPRISE—HEAT MELTS ICE

Get your facts first; then you can distort them all you please.

Unknown

Globally, temperatures are rising; glaciers are melting and shrinking; scientists are predicting increased numbers of damaging hurricanes (Zollo 2005); rainfall patterns are changing; and sea levels are rising. All these events will affect the reliability of global food production. In addition, higher seas are swamping native villages in far north Alaska, and the melting of the permafrost around Fairbanks is causing some roads and other structures to buckle (Egan 2005). Climate change is also affecting bird migration, a significant source of tourist dollars for some Alaskan villages. Portage Glacier can no longer be seen from the visitors' center.

Some politicians, corporate executives, and many citizens act surprised at these changing events and emphasize the uncertainty in scientific hypotheses and information. However, Swedish scientist Svante Arrhenius predicted, in the 1890s, that the Industrial Revolution would result in global warming, and evidence supporting his theory has been accumulating for well over a century. Uncertainty will always exist in science since theories are probabilistic determinations based on verifiable evidence. Citizens invest in the stock market and vote for political candidates based on the expectation that the stock market will benefit them and politicians will fulfill their campaign promises. Obviously, considerable uncertainty exists in both these expectations, but citizens still act.

Michaels (2005), a research epidemiologist, calls attention to similarities between his research and that of those who study climate change (including global warming). Michaels cannot intentionally expose people to carcinogens and must collect data through observation only; so must climate change investigators. He notes that uncertainties are inevitable, but neither public health nor environmental protection will be effective if absolute proof is required before acting. Otherwise, action will be indefinitely postponed, which, Michaels notes, is often exactly what industry wants. As a consequence, part of industry has mastered the art of manufacturing uncertainty and demanding absolute proof.

Worse than this situation are recent disclosures that unqualified government employees are altering scientific reports. For example, the former US White House staff member (Philip Cooney) who revised government-generated scientific reports on global warming resigned his position following these disclosures and promptly acquired a position with Exxon Mobil. He was a lobbyist with no scientific credentials (Revkin 2005).

Yet another approach is used when the facts do not fit the ideology—the administration just rewrites the facts (Opinion 2005, Goodman 2005, Cart 2005). If none of the preceding strategies work as well as expected, the tactic of delay is used. For example, McNeil and Barrionuevo (2005) report that the US Department of Agriculture finally confirmed, after seven months delay, that a cow had died last year with Mad Cow disease. The result was never publicly disclosed, even though interest in this disease has been intense both nationally and internationally; many countries have banned shipments of US beef because they consider testing techniques lax.

The American Civil Liberties Union charged that the US President Bush's administration is placing science under siege by overzealously tightening restrictions on information, individuals, and technology in the name of homeland security (Associated Press 2005). Another strategy is to resist any discussions on an issue perceived as unfavorable to the government's cause. For example, Heilprin (2005) reports that the Bush administration is working on a draft report on climate and energy about the need to resist naming global warming as an urgent problem that requires aggressive action. Still another approach is to annex the news and public affairs of the US Public Broadcasting System to the larger state propaganda machine (Rich 2005).

A widely read news outlet, *USA Today*, has proclaimed that the global warming debate is over (Vergano 2005). Vergano notes that the ground has shifted on global warming since, with little fanfare, divergent groups are joining hands to deal with a problem they believe people can no longer ignore. However, there is still a long way to go. The administration of US President Bush is still trying to downplay global warming as a major problem for humankind. Many large corporations still spend huge amounts of money minimizing the importance of global warming. A large number of people are unwilling to change their life styles to diminish anthropogenic greenhouse gases, and literacy on global warming is still appallingly low. All these tactics are reflected in the reluctance of the US Congress to take a strong position on global warming. The fact that this reluctance results

in deep disappointment in Europe and other areas of the world seems not to matter (e.g., Woolf and Brown 2005).

Even the Kyoto agreement, if implemented, is regarded by mainstream science as an inadequate solution, although it is widely viewed as an important first step. Global warming is now a battle between science and ideology, although a favorite delaying tactic is to call for more research. As noted previously, it is the nature of science to always have different levels of uncertainty. Gathering more scientific evidence on global warming is highly desirable, but no amount will displace ideology. Compassion for those already suffering from global warming in Europe (e.g., LaFranchi 2005), Pacific Islanders forced to leave their native lands, and the Inuits in the US State of Alaska is not very evident. Even compassion for future children, grandchildren, and their descendants is not apparent. Bustillo (2005) quotes Peter Hoppe, head of the "geo risks" division at Munich Re, the world's largest insurer of insurance companies, that his biggest worry is what global warming is already costing the \$3-trillion insurance industry. The present situation is difficult because the techniques for estimating disaster risks are based on historical trends, which may no longer be reliable. Other professionals, such as Pielke (Bustillo 2005), note that the reinsurance industry has a powerful vested interest in charging the highest rates possible. A former insurance executive, Andrew Elugolecki, stated that, unless insurers could adjust their premiums to match the uncertainties they see, they might eventually stop offering some types of coverage, such as oceanfront properties (Bustillo 2005). Historic data will probably be less useful in estimating the risks of global warming than such things as fire and theft.

McCarthy (2005) wonders if the United States can prevent wealthy countries from agreeing on what to do about climate change; he concludes that the omens do not look good. Other questions concern areas such as Africa and its poverty. Many professionals note that everything that makes Africa hard to inhabit today will be made harder by global warming. Even though the United States may not endorse a Kyoto Protocol style agreement, global warming proponents may shift the approach in a new direction. The tide may be turning, but it may be turning too slowly to prevent a series of catastrophes.

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