sex without contraception yields an unwanted pregnancy, or a drunk driver has an accident. But systemic causation is nonetheless causal.

Semantics matters. Because the word *cause* is commonly taken to mean direct cause, climate scientists, trying to be precise, have too often shied away from attributing causation of a particular hurricane, drought, or fire to global warming. Lacking a concept—a frame—and language for systemic causation, climate scientists have made the dreadful communicative mistake of retreating to weasel words. Consider this quote from "Perception of Climate Change," by James Hansen, Makiko Sato, and Reto Ruedy, published in the *Proceedings of the National Academy of Sciences*:

> . . . we can state, with a high degree of confidence, that extreme anomalies such as those in Texas and Oklahoma in 2011 and Moscow in 2010 were a consequence of global warming because their likelihood in the absence of global warming was exceedingly small.

The crucial words here are *high degree of confidence*, *anomalies*, *consequence*, *likelihood*, *absence*, and *exceedingly small*. Scientific weasel words! The power of the bald truth, namely causation, is lost.

This is no small matter: The fate of the earth is at stake. The science is excellent. The scientists' ability to communicate is lacking. Without the words, the idea cannot even be expressed. And without an understanding of systemic causation, we cannot understand what is hitting us.

Global warming is real, and it is here. It is causing—yes, causing—death, destruction, and vast economic loss. And the causal effects are getting greater with time. We cannot merely adapt to it. The costs are incalculable. What we are facing is huge. Each day, the amount of extra energy accumulating via the heating of the earth is the equivalent of 400,000 Hiroshima atomic bombs. Each day!

What Journalists Can Do

Because systemic causation has mostly gone unframed and unnamed,