

From Class notes of Steve Schneider:

Therefore, even though the scientific community expresses considerable confidence for frequently observed events, the community is particularly reluctant to ascribe levels of confidence to singular events like collapse of the “conveyor belt” thermohaline circulation (THC) of the North Atlantic Ocean or the West Antarctic ice sheet. So it is not surprising that the scientists have struggled with ways to both alert the public to these possibilities and at the same time not appearing overconfident in projecting outcomes that cannot be directly validated by the data available now or in the foreseeable future.

**TABLE 2. Type 1 versus Type 2 errors and their consequences.**

<b>Decision</b>	Forecast proves false	Forecast proves true
Accept forecast—policy response follows	<b>Type I error</b>	Correct decision
Reject or ignore forecast—no policy response	Correct decision	<b>Type II error</b>

It is common in policy analysis to refer to an incorrect forecast that was taken to be true as a “type 1 error” and a decision to ignore an uncertain forecast that turns out to be true as a “type 2 error”. The prime paradigm within the scientific community is to view the type 1 error as the more egregious mistake, whereas within the policy arena, the type 2 error is often more concerning. Decision-makers often prefer to hedge against a potentially damaging event rather than wait for it to possibly happen. Clearly, there is a trade-off between the types of errors; reducing the type of one error compromises the other. The dilemma that this trade-off implies has plagued IPCC and will continue to do so as a result of the difference in cultural norms—competing paradigms essentially-- between science and policy communities. Therefore, translating the conclusions of scientists framed in carefully hedged language appropriate to “type 1 error culture” into credible language interpretable by the decision making community is an ongoing challenge.