

***Interactive comment on “Reply to Comment on  
“Using multiple observationally-based constraints  
to estimate climate sensitivity by Annan and  
Hargreaves (2006)” by Henriksson et al. (2010)” by  
J. D. Annan and J. C. Hargreaves***

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Thank you for your comments which help to clarify some points of disagreement and agreement.

On the subject of economic arguments, there may be some minor miscommunication. Actually, from a philosophical point of view, we do not see why someone could not start from a prior on economic loss rather than climate sensitivity, if they wished to do so. However, we were not advocating or adopting this approach.

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Rather, the point we were trying to make in the quoted section ("Perhaps more importantly...") was simply to stress that since the range of priors that had been used previously covered such a broad range of extremely high anticipated damages, the choice of prior for  $S$  is obviously an important point to consider and thus the debate is not merely an arcane academic one, but rather has direct policy implications. Thus, this was not used to design the prior, but merely to add support to our claim that this was an important and under-appreciated aspect of any analysis. As we showed, when a uniform prior is used, the choice of upper bound is critical and may have an overwhelming impact on the results. While we would not use the prior estimate of economic loss directly to help generate a prior for  $S$ , we certainly recommend exploring (and openly discussing) how sensitive the economic conclusions (both prior and posterior) are to the choices made. We have improved the wording a little in the current manuscript.

We re-emphasise that we would be very pleased to see alternative calculations presented, especially from those who are sceptical of our results.

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Interactive comment on Clim. Past Discuss., 7, 431, 2011.

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