CORRESPONDENCE:

Long history of IAM comparisons

To the Editor — We agree with the point made in a recent Editorial in this journal[1] that the assumptions behind models of all types, including integrated assessment models (IAMs), should be as transparent as possible. However, it is incorrect to imply that the IAM community is just "now emulating the efforts of climate researchers by instigating their own model inter-comparison projects."

In fact, model comparisons for integrated assessment and climate models followed a remarkably similar trajectory. Early general circulation model (GCM) comparison efforts[2] evolved to the first Atmospheric Model Inter-comparison Project (AMIP), which was initiated in the early 1990s[3]. Atmospheric models developed into coupled atmosphere–ocean models (AOGCMs) and results from the first Coupled Model Inter-Comparison Project (CMIP1) became available about a decade later[4].

Results of first energy model comparison exercise, conducted under the auspices of the Stanford Energy Modeling Forum, were published in 1977[5]. A summary of the first comparison focused on climate change was published in 1993[6]. As energy models were coupled to simple economic and climate models to form IAMs, the first comparison exercise for IAMs (EMF 14; https://emf.stanford.edu/projects) was initiated in 1994, and IAM comparison exercises have been ongoing since this time[7–10] — and were recently assessed in the latest IPCC report[11] — including a publicly accessible database of scenarios (https://secure.iiasa.ac.at/web-apps/ene/AR5DB). ❐

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CORRESPONDENCE:

Strategies for changing the intellectual climate

To the Editor — Castree *et al.*[1] are correct that a 'single, seamless concept of integrated knowledge' cannot do justice to the diversity of meanings that need to be brought to bear in addressing the challenges of global environmental change. We also agree with them that environmental social sciences and humanities (ESSH) can make important contributions to global environmental change (GEC) science. However, their charge that we ignore the full range of anthropological contributions to understanding of climate change reflects a misreading of our recent Perspective[2] in this journal, as we only attempted to discuss a few exemplary strands of the many contributions from anthropology to a richer understanding of climate change (for a more detailed discussion, see our forthcoming edited volume[3]).

Secondly, Castree *et al.* suggest that we are reinforcing the status quo in GEC science and 'pulling our punches' by using terms common in Earth systems science (such as system and mechanism). Our use of such terms reflected a strategy to use familiar language to raise awareness of anthropological contributions little known to most GEC scientists, along the lines of the 'clumsy solutions' proposed by anthropologist Steven Rayner[4]. Rayner calls for these solutions to 'wicked problems' such as climate change — problems marked by deep underlying conflicts about the nature of the problem itself — because they can allow different actors to work together without sharing ethical or epistemological principles. We agree with Castree *et al.* that other strategies are possible, but not that theirs is the only route to a wider dialogue.

Castree *et al.* focus on three texts to illustrate how GEC scientists evoke the notion of seamless, totalizing knowledge. They single out the use of terms such as 'integration' in discussions of knowledge to