Hydrol. Earth Syst. Sci. Discuss., 10, C3232–C3234, 2013
www.hydrol-earth-syst-sci-discuss.net/10/C3232/2013/

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Endogenous change: on cooperation and water in ancient history" *by* S. Pande and M. Ertsen

V. Srinivasan (Editor)

veena.srinivasan@gmail.com

Received and published: 18 July 2013

We have received four reviews from reviewers representing a range of disciplines – two historical geographers, one historian and a water resources expert.

Overall I feel this paper and the interactive discussion it had provoked is a valuable addition to the special issue.

However, all four reviewers have raised concerns about framing, methodology and exposition and these have only been partly addressed.

Framing of the paper The authors have chosen two case studies to illustrate their theory of endogenous change - that both climatic variability and the water institutions that

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

evolved to manage them are needed to explain the rise and eventual decline of two ancient civilizations, the Indus and the Hohokam. As reviewer M. Akhtar points out the paper does not fully explain the basis of the comparative case study method – are the cases replicates or different cases that show similar outcomes? I think this is a valid point and relatively easy to address – but still missing in this version.

Linking causal claims to evidence Since the authors are not archaeologists, I think it is acceptable to rely on secondary sources. However, to make the case for the theory of endogenous change, the authors must cite sufficient archaeological evidence to show that climatic factors alone could not explain the demise of the Indus and Hohokam civilizations.

The main point several reviewers have raised is whether the paper provides evidence that the “human feedback” - cooperation- is necessary to explain the rise and decline of the two civilizations. Calling it “theory of endogenous change” requires that proving that something inherent in the types of cooperative institutions that evolved made their demise under stress inevitable. Several of the reviewers have pointed out that the archaeological evidence of dispersed settlements is not really sufficient to prove lack of cooperation - they might simply be a symptom of a dying civilization with no surpluses to trade and populations migrating in search of food rather than lack-of-cooperation as a rational response to scarcity. I am going to send this back to the reviewers to see if they are satisfied.

Too much jargon I feel the paper is still too full of jargon.

Language poses a problem for any interdisciplinary work. I think for this paper to be accessible to the broad audience of this special issue it is critical to greatly simplify the language and I strongly encourage the authors to do so.

For instance, defining endogenous change in simple terms early on in the paper would be helpful as "endogenous institutional change" is a term familiar to institutional economists but not others. I suggest the authors refer back to the original Greif and

HESSD

10, C3232–C3234, 2013

Laitin paper and use the simple language there as a model. The original paper is actually quite accessible even to non-economists. Greif's paper points out that much of the previous analysis of institutional change concentrated on the dynamics following environmental changesâĂŤthat is, changes in parameters external to the institutions under study. Instead, Greif proposed that certain institutions unleash processes that lead to their own demise - they refer to this as the theory of endogenous institutional change.

Sentences like the following are unlikely to make sense to the broad audience of the special issue. -"We study changes in institutions as a sequence of equilibria brought about by changes in "quasi-parameters" such as rainfall, population density, soil and land use induced water resource availability." -"test regularities predicted by an extension of river game theory to endogenous change." -"Then an ordering of autarkic valuations from the most upstream agents to the most downstream agent is sufficient for a basin scale cooperative structure to emerge (Pande, 2013). The determinants of autarkic valuation of an agent such as population, land cover and production activities are the "quasi-parameters" that the agents then alter, altering local scarcity conditions relative to others and thus conditions for cooperation in the future."

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 4829, 2013.