

Sustainability: Four Questions

Jim Proctor
Lewis & Clark College
AESS 2015 Annual Meeting
San Diego, CA

Interrogating Ideas

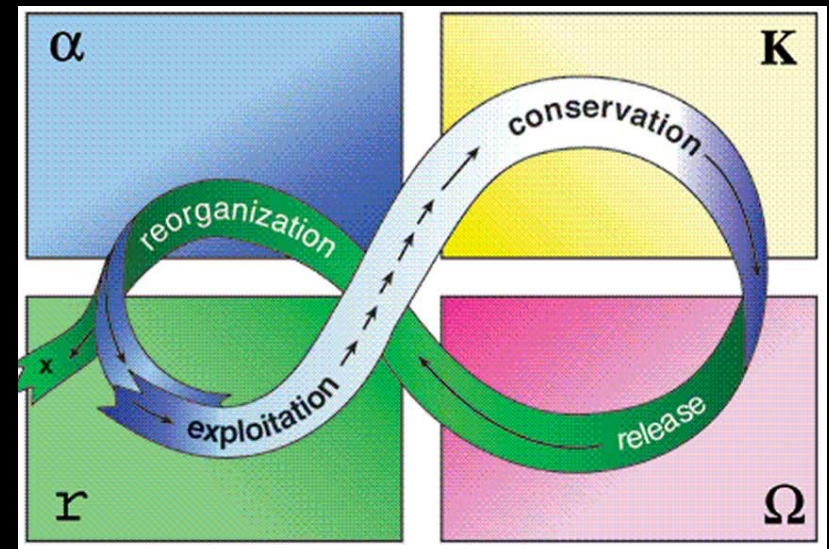
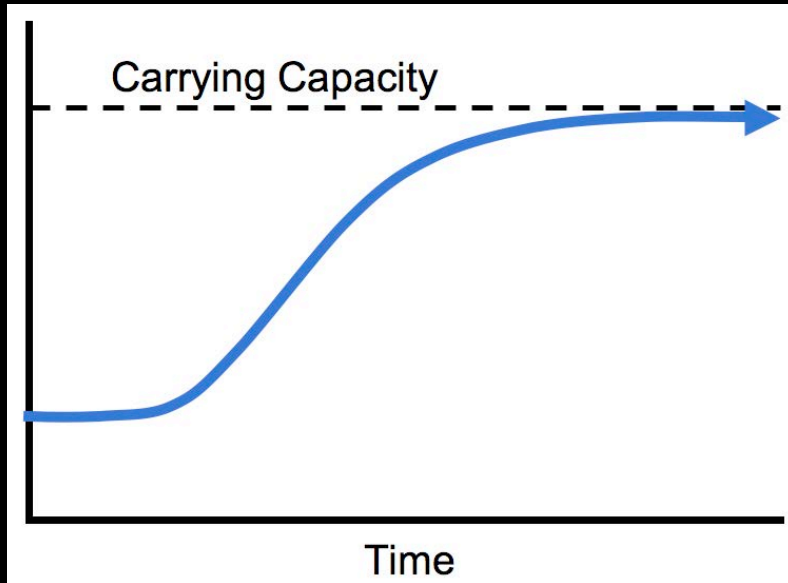
Ideas are like vehicles: some get you farther than others, some allow navigation through varied terrain, some are much more beautiful than others. I suggest that the better we think about thinking about [insert idea/framework here], the farther we'll go in saving nature, the more varied terrains of nature we will successfully navigate, and the more beautiful our journey will be.

Proctor JD (2009) Old growth and a new nature: The ambivalence of science and religion. In: Spies TA, Duncan SL (eds) Old growth in a new world: A Pacific Northwest icon reexamined. Island Press, pp 104–115

Four Questions

- What is sustainability in time?
- What is sustainability in space?
- What is the science of sustainability?
- What are the politics of sustainability?

What is S in Time?

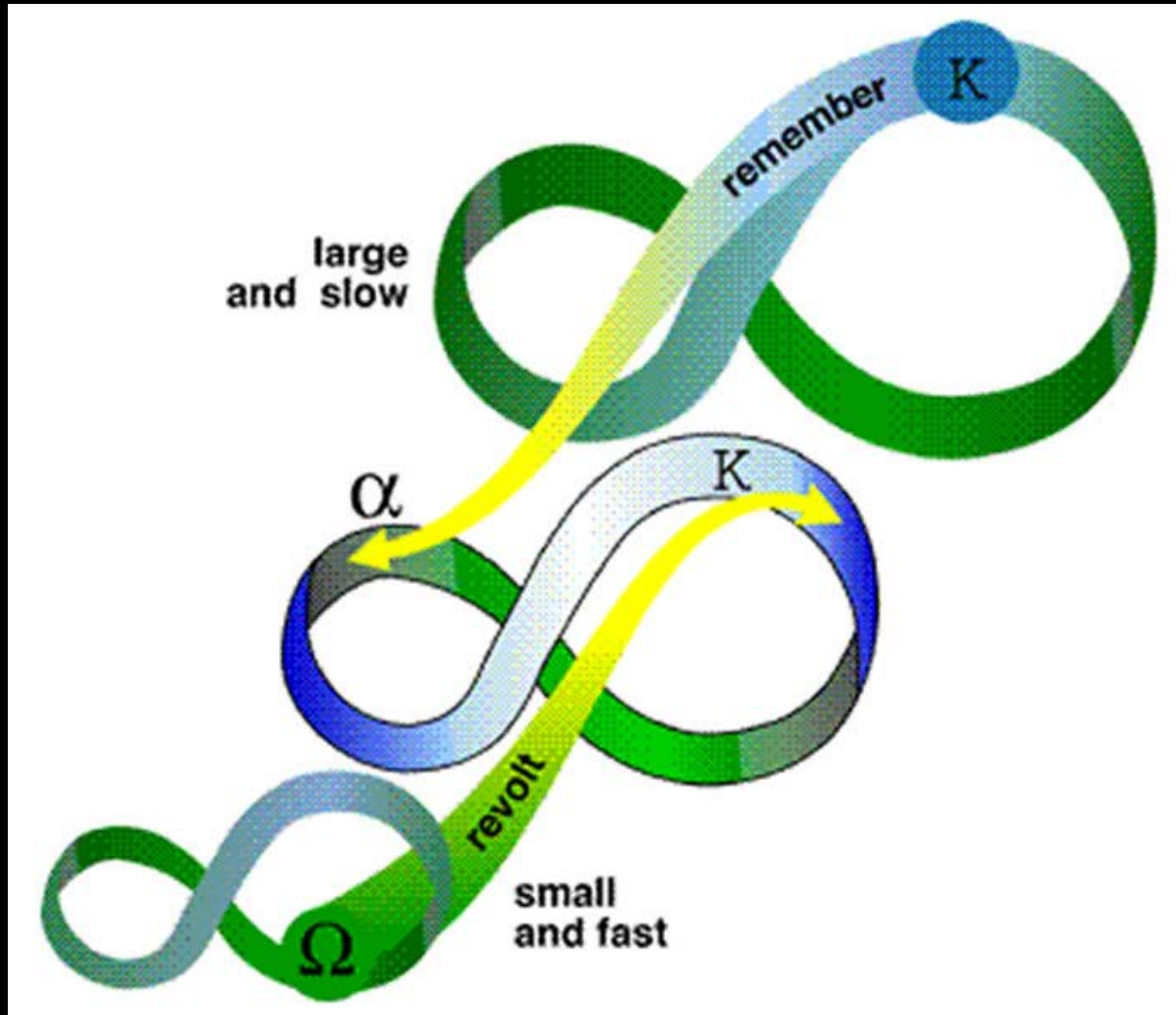


Holling CS (2001) Understanding the complexity of economic, ecological, and social systems. *Ecosystems* 4:390–405

What is S in Space? I



What is S in Space? II



What is S in Space? III

“In *Our Common Future* the sustainable use of resources is shown to demand more than simply dealing with micro-scale questions....Sustainable development must be global in scope and internationalist in formulation.”

–*Green Development: Environment and Sustainability in a Developing World* (Adams 2009)



What is the Science of S? I

SCIENCE'S COMPASS

POLICY FORUM: ENVIRONMENT AND DEVELOPMENT

Sustainability Science

Robert W. Kates, William C. Clark,* Robert Corell, J. Michael Hall, Carlo C. Jaeger, Ian Lowe, James J. McCarthy, Hans Joachim Schellnhuber, Bert Bolin, Nancy M. Dickson, Sylvie Faucheux, Gilberto C. Gallopin, Arnulf Grübler, Brian Huntley, Jill Jäger, Narpat S. Jodha, Roger E. Kasperson, Akin Mabogunje, Pamela Matson, Harold Mooney, Berrien Moore III, Timothy O'Riordan, Uno Svedin

Meeting fundamental human needs while preserving the life-support systems of planet Earth is the essence of sustainable development, an idea that emerged in the early 1980s from scientific perspectives on the relation between nature and society (1). During the late '80s and early '90s, however, much of the science and technology community became increasingly estranged from the preponderantly societal and political processes that were shaping the sustainable development agenda. This is now changing as efforts to promote a sustainability

nature and society. Such an understanding must encompass the interaction of global processes with the ecological and social characteristics of particular places and sectors (3). The regional character of much of what sustainability science is trying to explain means that relevant research will have to integrate the effects of key processes across the full range of scales from local to global (4). It will also require fundamental advances in our ability to address such issues as the behavior of complex self-organizing systems as well as the responses,

Sustainability science: The emerging research program

William C. Clark* and Nancy M. Dickson
John F. Kennedy School of Government, Harvard University, Cambridge, MA 02138
Communicated by Susan Hanson, Clark University, Worcester, MA, March 7, 2003 (received for review February 25, 2003)

The last decade has witnessed the emergence of an array of increasingly vibrant movements to harness science and technology (S&T) in the quest for a transition toward sustainability. These movements take as their point of departure a widely shared view that the challenge of sustainable development is the reconciliation of society's development goals with the planet's environmental limits over the long term. In seeking to help meet this sustainability challenge, the multiple movements to harness science and technology for sustainability focus on the dynamic interactions between nature

emerged from the United Nations Conference on Environment and Development in 1992. Over the succeeding decade, the discussion of how S&T could contribute more effectively to sustainability intensified, involving numerous researchers, practitioners, scientific academies, and development organizations from around the world (2). By the time of the World Summit on Sustainable Development, held in Johannesburg in 2002, a broadly based consensus had begun to take shape on the most important ways in which S&T has already contributed to sustainability, on what new R&D is most important, and on what stands in the way of putting it

of sustainability with a greater willingness to join with the development and other communities to work on practical solutions to those problems. This means bringing our S&T to bear on the highest-priority goals of a sustainability transition, with those goals defined not by scientists alone but rather through a dialogue between scientists and the people engaged in the practice of "meeting human needs while conserving the earth's life support systems and reducing hunger and poverty" (17). At the international level, the Johannesburg Summit, building on the United Nations Millennium Declaration, has defined these

Sustainability SCIENCE

Bert J. M. de Vries

CAMBRIDGE

What is the Science of S(D)? II

“These four phases or processes make up the four R’s of sustainability and development: release, re- organization, remembrance, and revolt. They provide new categories that can be used to organize the more specific indicators and attributes discussed in documents aimed at finding ways to evaluate sustainability and development.

To summarize: The panarchy describes how a healthy socioecological system can invent and experiment, benefiting from inventions that create opportunity while it is kept safe from those that destabilize the system due to their nature or excessive exuberance.”

-Understanding complexity (Holling 2001)

What are the Politics of S?

I have not been able to find a single source that is against sustainability. Greenpeace is in favour, George Bush Jr. and Sr. are, the World Bank and its chairman (a prime war monger in Iraq) are, the pope is, my son Arno is, the rubber tappers in the Brazilian Amazon are, Bill Gates is, the labour unions are. All are presumably concerned about the long-term socio-environmental survival of (parts of) humanity; most just keep on doing business as usual.

Swyngedouw E (2010) Impossible sustainability and the post-political condition. In: Cerreta M, Concilio G, Monno V (eds) Making Strategies in Spatial Planning. Springer Netherlands, Dordrecht, pp 185–205

Conclusion

- The sustainability movement is huge, and well worth inclusion in ESS as an object of study
- Sustainability as the normative framework for ESS, however, conveys significant limitations
- A better strategy for now: Ideological pluralism
 - Socioecological resilience
 - Political ecology
 - Environmental justice
 - A good Anthropocene
 - ...and there are others!