Reconstructing Historic Socio-Environmental Interactions  
September 13th, 2008  

Sander van der Leeuw – School of Human Evolution and Society Change,  
Arizona State University

- There is a change in thinking in the research front to incorporate social aspects
- Emphasis on interdisciplinary research that encompasses human interactions with their environment
- Research into long-term dynamics is needed to better understand the cycle of a culture and the combined effects
- Second order dynamics need to be considered – the “change of change”
- Archeology is the only discipline that can provide an insight into long-term historical trends
- Archeology has been transformed to a discipline that deals with concrete and substantive scientific data
- Changes that occurred in society during the Pleistocene  
  - collected what they could use from the environment  
  - moving was required  
  - remained below the environmental carrying capacity  
  - people lived with risk and minimised change
- Changes that occurred in society during the Neolithic  
  - cleared fields  
  - started investing in the environment  
  - used new “technology”  
  - lived in villages  
  - were able to “be” a society  
  - changed from harvesting to investing in the environment meant that mobility was no longer important
- People intervened more and more with the environment
- Sedentary societies tried to control their environment and alter the range of natural dependencies
- Rather than adapting to a new environment, problem-solving became the key to survival
- Larger interactive groups developed resulting in more chance of conflict
- These societies became more vulnerable to external and internal disturbances
• Rome: people became used to the Mediterranean environment

• Urban structure in France was created by Romans

• Rhone River Study: Romans had similar perception of the landscape that we do now
  – they had an administrative vision of rural areas
  – grids and drainage infrastructure were set out
  – little consideration of the state of the landscape
  – large cultivation capacity to support population in Rome

• Regional climatic data shows climate impact or “crisis” in Roman period

• There was no direct relationship between climate and settlement stability

• Choices in the landscape were selected based on soil classification – the most fertile were light soils at the bottom of hills because they could be tilled most easily
  – therefore most settlements were at the base of hills
  – taxation correlates with soil type

• Most settlements only lasted a couple of centuries
  – settlements were incoherent and hard to maintain
  – vulnerable structure because more transport is needed to maintain settlements

• Why can’t a society dig itself out of a social and environmental problem?

• The environment has become so modified it depends on humans and humans may not have the energy required to support the environment

Questions

• Interdisciplinary – how to build this approach within your research institution?
  – this grows with more multidisciplinary people
  – specifically appoint people from different disciplines
  – change administration and countries for teaching to allow interdisciplinary teaching

• Vision of man to environment – always takes us to a sustainable point – is the concept of ‘sustainability’ just utopia?
  – in one way yes, it is hard for one culture to maintain its environment without intervening too much
  – a vision is defined by our reaction of what is happening. What we need to do is to conceive a future that we would like and then put things in place to achieve that goal
  – we need to go back to long-term planning
• Is postmodernism an asset or is it hampering social science and if it is a good contribution to interdisciplinary research?
  – post modernism is a healthy critique on what happened before

• Why do investments take place in the way it has (in Europe)?
  – agricultural development on the average yield might not apply to the given landscape
  – there is a need to feed cities, this creates a dependency on the greater area.

• How to face our crisis and interdisciplinary challenges?
  – there is a fundamental change in mindset of the new generation. We are going to be forced to address the “crisis”
  – nanotechnology is of growing concern
  – the hope is that we will be able help change the society

• Research of other civilizations
  – currently researching – Maya, China, Egypt, Inca (Integrated History of People on Earth project)

Sarah Raphaël Goldin