Jargon to Layperson Translation: Relating TEK & AEK

Main Idea

- The integration of traditional and academic ecological knowledge (TEK and AEK) is subject to a great dilemma centered on division and assimilation.
- Division - emphasis has been made on the differences between TEK and AEK
  - criticized for creating artificial division between the two, marginalizing TEK
- Assimilation - increased concern about inadequate incorporation of TEK into scientific practices
  - works to dismiss the holistic aspects of TEK
- The authors argue that there exists relations between TEK and AEK that avoid both points of this dilemma
  - the indigenous that hold TEK are able to understand the scientific mechanisms that guide ecological phenomena
  - AEK often relies on the holistic strategies of TEK when dealing with ecological complexity.

Main Points

- TEK refers to long-held indigenous knowledge, beliefs and practices relating to the local environment
- AEK refers to knowledge of the natural environment created and used by various scholarly disciplines, such as biology.
- TEK is important to understanding and managing local environments
  - considered relevant in the biological and environmental science disciplines
- The integration of TEK into scientific institutions creates tensions
  - the "scientifically useful" parts of TEK are intertwined with spiritual values and worldviews that are different from the academic approaches of scientists
    - can lead to the obscuring of these core aspects of TEK

Main Points

- AEK is mechanistic in nature
  - involve analyses of “parts whose activities and interactions are responsible for the phenomena"
  - stark contrast to holistic approaches, which look at ecosystem in wholes
- Contrary to popular belief, TEK can identify these mechanisms and intertwine them into management strategies
- Example: Study of Balinese rice farming by JS Lansing

Main Points

J. Stephen Lansing's 1991 study of Balinese rice farming

- Green Revolution reached Indonesia in 1970s
- Introduction of new rice strains with quicker maturation, higher yields
- Transformation of agricultural practices
  - Intense use of fertilizer and pesticides.
  - Abandonment of traditional cropping and irrigation patterns
- Disastrous consequences
  - Water shortages
  - Pest outbreaks
  - Crop damage
    - Strains highly susceptible to pests and pathogens

Main Points

- Balinese TEK guided farming practices that provided the water management and pest control that would have prevented this agricultural disaster
    - Water temples that controlled water flow according to certain schedules to prevent shortage
    - Synchronized fallow periods prevented the spread of pests such as rodents and insects as well as bacterial and viral diseases.
- example of how TEK has the capacity to identify complex ecological mechanisms in the environment and intervene in them

Main Points

- On the flip side, AEK often makes use of the holistic strategies of TEK when dealing with ecological complexity.
- Mechanistic analyses and predictive models are not always feasible
  - incomplete understanding of the particular biological and ecological mechanisms in a particular ecosystem
- The focus on patterns and regularities by TEK is useful to AEK as it allows for the construction of predictive models without the need for a complete knowledge of all underlying mechanisms
- In conclusion, the conventional simplistic understanding of TEK and AEK as holistic and mechanistic, respectively, is inadequate in describing their complexities and disregards their interconnectedness and its benefits

Interesting Details

- With the introductions of different techniques and new systems they typically came as double edged sword
- This means that although there were positives there was also severe consequences such as in Lansing’s work in the Balinese rice farmings
- With the overview of such text we are able to understand the relationship that TEK and AEK both share and how despite there being a disruption between both they in fact are intertwine with one another
- Such relationship is build of with the dependence on both ends up to extent as we have previously concluded that being that to extent, AEK will deal more with the scientific aspect and TEK on the more indigenous level yet both feeding into one another

How Does it Relate?

- The concepts of TEK and AEK exists in the medical field
  - traditional and modern medicine
- The arguments in this research can serve as a framework for relating traditional and modern medicine
  - Traditional medicine, while oft looked down upon as "unscientific", is just the opposite
    - based on identified mechanisms of human health
    - aids drug discovery

Thank you!