

Culture, Cognition and Environment

Michael Paolisso

Department of Anthropology
University of Maryland

Anthropology Immersion Workshop
National Socio-Environmental Synthesis Center
March 1, 2016

What is culture?



CULTURE

WE ARE HERE TO SHARE	OUR CORE VALUES	WE ASPIRE TO BE
An Extraordinary Experience that Feeds the Soul	 Our Commitment to our Guests <ul style="list-style-type: none">• Quality• Innovation• Career Fair	The Community First 1 Love
	 Our Commitment to our Community <ul style="list-style-type: none">• Fair• Respectful• Responsible	
	 Our Commitment to our Team Members <ul style="list-style-type: none">• Listen• Develop• Recognize	
	 Delivered with our Unique Personality <ul style="list-style-type: none">• Fun• Passionate• Authentic	



Culture Defined

- Culture: the integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations
- Culture: the customary beliefs, social forms, and material traits of a racial, religious, or social group
- Culture: the characteristic features of everyday existence (as diversions or a way of life) shared by people in a place or time
- Culture: the set of shared attitudes, values, goals, and practices that characterizes an institution or organization
- Culture: the set of values, conventions, or social practices associated with a particular field, activity, or societal characteristic

Culture and Nature



A Cognitive Approach to Culture

- “A society’s culture consists of whatever one has to know or believe in order to operate in a manner acceptable to its members, and do so in any role that they accept for any one of themselves.”
(Goodenough 1957:167)
- Places culture squarely within knowledge and belief systems but without saying what kinds of knowledge or their application
- Requires discovery procedures to identify domains, their content, organization, and underlying features
- Interested in how cognitive knowledge is shared (not just individual mental knowledge) and shaped by social, political, economic and environmental factors
- Redefines cultural group: if we share this culture then we recognize that we belong to the same group;

Five Cognitive Anthropological Approaches (applied to Environment)

Taxonomies: rules or principals that explain knowledge organization (e.g., ethno-biology and ethno-ecology)

Cultural Domains: a more-or-less bounded universe of content or meaning; domains have core and some boundaries, though this gets messy as domains become more complex

Prototypes: use of a focal representative, a prototype, to define a category and to identify other members of the category according to the degree of similarity to the prototype

Cultural Models: “...presupposed, taken-for-granted models of the world that are widely shared by the members of a society and that play an enormous role in their understanding of the world and their behavior in it.” (Quinn and Holland 1987)

Cultural Consensus: A quantitative approach that assumes if individuals have similar views and understanding, they share an underlying system of cultural knowledge.

Cultural Domain Analysis: Harmful Algae as Cultural Organism

- *Pfiesteria*: “hysteria,” household word, “make sense”
- People or groups must be using cultural knowledge to understand *Pfiesteria*
- *Pfiesteria* became part of our environmental action and politics
- Created debates about reducing farm nutrient runoff
- Farmers and Environmentalists

Farmer and Environmental Professional Views on Pfiesteria: Really that Different?

- **Key terms to identify broad parameters of cultural domain of *Pfiesteria* (Table 1)**

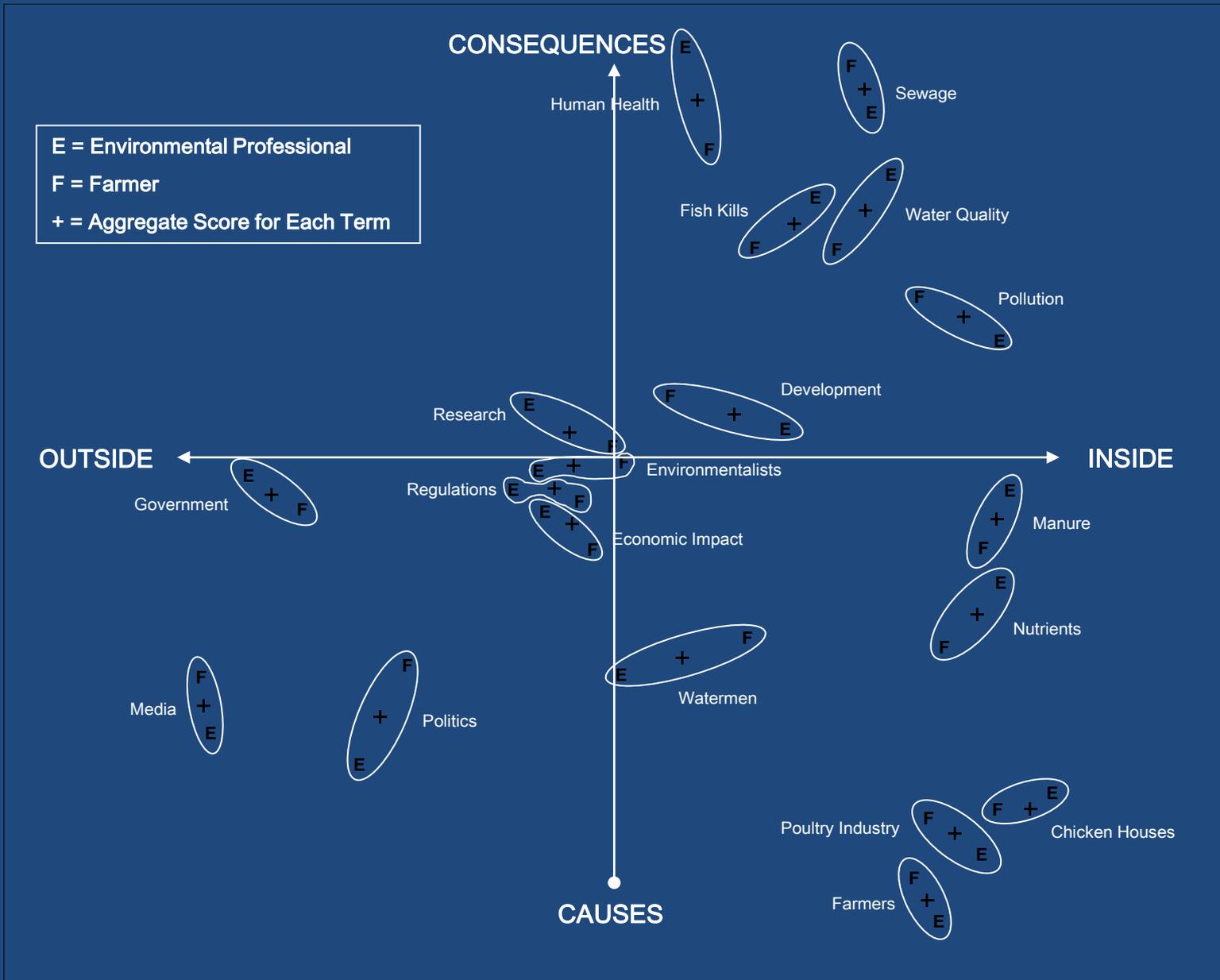
Chicken houses Environmentalists Fish kills
Development Farmers Government
Economic impact Human health Manure
Media Nutrients Politics
Pollution Poultry industry Regulations
Research Sewage Water quality
Watermen

Farmer and Environmental Professional Views on Pfiesteria: Really that Different? (con' t)

- **Triadic Comparison**

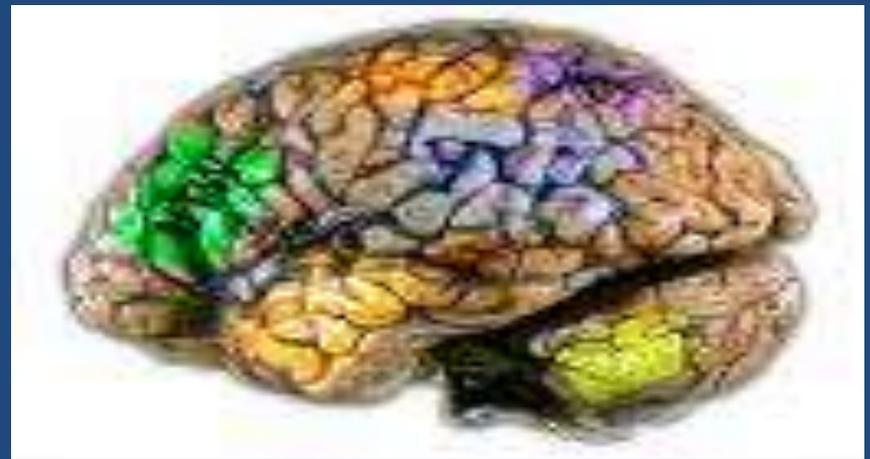
Sewage	Media	Research
Farmers	Nutrients	Government
Farmers	Sewage	Poultry Industry
Human Health	Water Quality	Government
Chicken Houses	Manure	Poultry Industry

Figure 1: Correspondence Analysis of Environmental Professional and Farmer Terms Linked to *Pfiesteria*



Culture as Shared Cognition: Cultural Model

- Culture: “whatever it is one has to know or believe to operate in a manner acceptable to its members”
- Cultural models are presupposed, taken-for-granted understandings of the world that are shared by a community (local or multi-sited);
- Comprised of inter-connected schemas or cognitive templates;
- In new or uncertain (environmental) situations, reasoning draws heavily on cultural models.



Cultural Model Methodology

- Semi-Structured Interviews (Quinn 2005) to simulate natural discourse, transcribed;
- Computer Assisted Qualitative Data Analysis (Atlas.ti) to code and analyze theory propositions/statements to identify underlying tacit/implicit knowledge and values;
- Logical framework to an ethnographic framework to a cognitive framework through three-step team coding
 - Deductive codes from logical framework/semi-structured interview
 - Team pile sort deductive codes and label piles to create ethnographic codes and then a second round of coding
 - Network the codes based on an environmental event or problem and then answer the question: “what implicit/tacit knowledge underlies the statements and codes?”

Farmer Cultural Model of Land Conservation (Paolisso et al. 2013)

Figure 1: Farmer Cultural Model of Land Conservation



Culture as Distributed Knowledge

- Many ethnographies essentialize culture by ignoring within-group variation.
- Culture can be seen as a distribution of shared individual cognitions and representations.
- Goal: to understand factors that account for this distribution. Some of distribution driven by human universals but some driven by context.
- Culture is an emerging phenomenon of shared cognition that evolves out of individual interactions with both social and physical environments.

Cultural Consensus Theory: Measuring Distributed Knowledge

- Describes and measures the extent to which cultural knowledge and values are shared
- Assumes that correspondence between the answers of any two respondents is a function of the extent to which each is correlated with some truth or underlying knowledge;
- Analytic procedures to estimate the culturally correct answers and informant correspondence to the group answers (answer key and curve)
- The theory/model assumes that there is only a single factor solution....a single knowledge system (e.g., map)
- Finding of cultural consensus does not mean universal agreement, but suggests one underlying knowledge system and degrees of expertise
- Consensus produces estimates of cultural competence in terms of modeled (environmental knowledge), which in turn can be correlated with social, political and economic data

Cultural and Socio-Economic Assessment of Oyster Restoration Alternatives (Paolisso and Dery 2010)

- Alternative 1: No Action Continue Maryland's and Virginia's present Oyster Restoration and Repletion Programs
- Alternative 2: Expand, Improve, and Accelerate Native Oyster Restoration Program
- Alternative 3: Implement Temporary Harvest Moratorium
- Alternative 4: Establish and/or Expand Aquaculture with Native Oyster
- Alternative 5: Establish and/or Expand Aquaculture: with Triploid Nonnative
- Alternative 6: Introduce and Propagate an Alternative Oyster Species (Other than *C. ariakensis*) or an Alternative Strain of *C. ariakensis*
- Alternative 7: Introduction of Diploid *Crassostrea ariakensis* And Discontinuation of *Crassostrea virginica* Restoration Programs
- Alternative 8: Combination of Alternatives

Assessment Methods

- **Literature Review**
 - Including published and unpublished information regarding socio-economic impacts of non-native introductions, harvest moratoriums, etc. and a review of biological, ecological, political, and economic issues surrounding oyster restoration
- **Open-ended Key Informant Interviews**
 - Interviews are conducted with skilled professionals from each of the stakeholder groups
- **Participant Observation Fieldwork**
 - Conducted in settings such as coastal towns, restaurants and docks in both Maryland and Virginia
- **Survey Questionnaires**
 - Surveys to target populations
- **Various Forms of Data Analyses**
 - Qualitative Data Analyses, Cultural Models Analysis, Frequency Analyses, Consensus Analysis



Survey Questions (22 Consensus Questions)

Restoration with native oysters could work given more time and the use of new approaches.

7	6	5	4	3	2	1
No Idea	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree

Managed oyster sanctuaries and reserves should be a larger part of the oyster fishery in the future.

7	6	5	4	3	2	1
No Idea	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree

Cultural Consensus Model Results: One Underlying Knowledge System

	N	1 st Stakeholder Group Factor Loading		Eigen value Ratio	
		Mean	S.D	1 st to 2 nd	2 nd to 3 rd
Combined	645	.70	.16	6.09	1.76
Watermen	377	.72	.16	10.11	1.18
Growers	29	.73	.10	3.85	3.16
Processors & Shippers	39	.76	.14	9.56	1.12
Scientists	30	.74	.16	4.64	2.68
Environmentalists	43	.77	.14	6.05	2.33
Recreational Users	151	.73	.09	5.49	1.78
Restaurant Owners	16	.75	.20	7.09	1.48

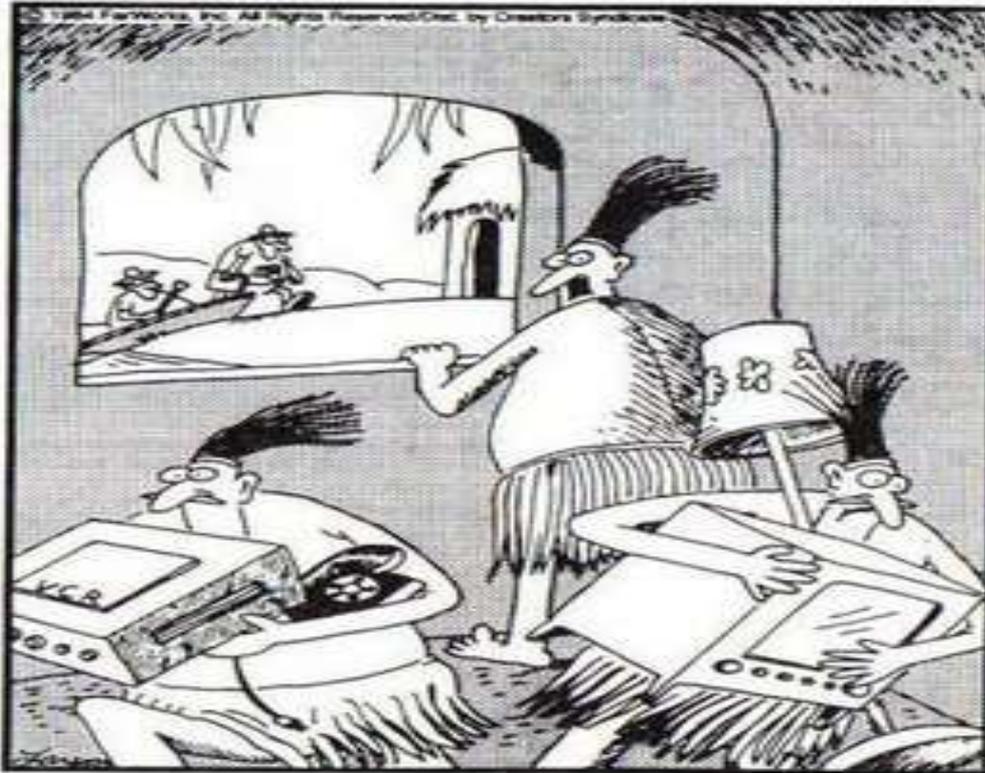
Cultural Consensus Questions	Stakeholder Consensus Model Answers		
	Watermen	Scientists	Environmentalists
Do you think we should introduce a non-native oyster into the Chesapeake Bay right now?	YES	NO	NO
Should there be time limits placed on how much science is completed before a decision is made?	YES	NO	NO
Do you think meeting oyster restoration goals is more important than distinguishing between native oysters and non-native oysters?	YES	NO	NO
Does successful oyster restoration need to include consideration of seafood market factors (e.g. demand, prices, etc.)?	YES	NO	YES

Why link Culture, Cognition and Environment?

- Sharpens and refines our understanding of the interactions between people and environment
- Produces very good ethnographic insights on human and environment dynamics
- Elicits core and emotive knowledge and values about the environment
- Accommodates multi-sited and inter-group relationships
- Knowledge includes social, economic, political and environmental factors
- Articulates well with trans-disciplinary socio-ecological research (e.g. vulnerability, resilience, adaptation)

Thanks!

THE FAR SIDE® BY GARY LARSON



The Far Side® by Gary Larson © 1984 FarWorks, Inc. All Rights Reserved. Used with permission.

"Anthropologists! Anthropologists!"