

Culture and Computers:

A review of the concept of culture and implications
for intercultural collaborative online learning

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▶ **What is Culture?**

- ▶ Raymond Williams: One of the most difficult words to define like home
- ▶ Roots in the German notion of *kultur*
- ▶ Technical and Vernacular uses of the word
 - ▶ High culture vs. Low/Popular Culture
 - ▶ “Culture Wars” in the USA
 - ▶ “Multiculturalism” in the USA and Western Europe
- ▶ *Academic subfields: Cultural*
 - ▶ *Anthropology*
 - ▶ *Sociology*
 - ▶ *Psychology*
 - ▶ *Philosophy*
 - ▶ *Studies*

Definition of Culture

- ▶ First Definition attributed to Edward Tylor:

“culture or civilization, taken in its wide ethnographic sense, is that complex whole which includes knowledge, belief, art, morals, law, custom, and other capabilities and habits acquired by man as a member of society.” (1903/1988, p. 64),

- ▶ Subjectivity (Time, History)
- ▶ Identity (Space, Geography)

Definitions of Culture

- ▶ Kroeber and Kluckhohn's (1952) **Compilation and Categorization**:
 - ▶ Compiled 200 definitions of culture
 - ▶ Categorized into 6 distinct groups of definitions

Groups	Emphasis
Descriptive	“Enumeration of content” (p.81)
Historical	“Social heritage or tradition” (p.89)
Normative	“Rule or way” (p.95)
Psychological	“Culture as a problem solving device” (p.105)
Structural	“Patterning or organization of culture” (p.118)
Genetic	“Culture as a product or artifact” (p.125)

Culture and Behavior

▶ (Hofstede, 1997)

Cultural Profile		
Cultural Dimension	“Anglo-Americans”	“East-Asians”
Hierarchy	Lower Power Distance	Higher Power Distance
Group Cohesion	Higher Individualism	Higher Collectivism
Gender Roles	Moderate Overlap	Lower Overlap
Uncertainty Avoidance	Lower	Higher

Culture and Communication

▶ (E. Hall, 1966)

“Anglo-Americans” Low-Context Communication	“East-Asians” High-Context Communication
Informational Emphasis	Social/Emotional Emphasis
Hurried Effective Speech	Unhurried Persuasive Speech
Unambiguous Interpretation Sought	Ambiguous Interpretation is Tolerated
Context is Functional	Context is Structural

Culture and Cognition

▶ (Nisbett and Norenzayan, 2002)

- ▶ **Universality:** Basic cognitive processes of sensation, perception, attention and memory are universal.
- ▶ **Content Independence:** Basic cognitive processes are invariant across contents.
- ▶ **Environmental-Sufficiency:** Cultural differences in cognitive processes are due to different environmental influences and not social influences.
- ▶ **Infinite Cultural Variance:** Cognition places no constraints on the possible evolutionary design space of cultures.

Culture and Cognition

▶ (Nisbett and Norenzayan, 2002)

Cultural Profile		
Cognitive Process	“Anglo-Americans”	“East-Asians”
Attention	Object	Field
Perception	Object-Oriented	Relation-Oriented
Causal Inference	Dispositional	Situational
Knowledge Organization	Categorical Rules	Relational Similarities
Reasoning	Analytical	Holistic

Culture and Computers

- ▶ Reeves and Nass's (1996) "The Media Equation"
 - ▶ Social aspects of human-computer interaction
- ▶ **User Interface Design**
- ▶ **Usability Evaluation**
- ▶ **Web Design**
- ▶ **E-Commerce**
- ▶ **Information Systems**
- ▶ **Computer Supported Cooperative Work**
- ▶ **Online Learning**

Dissertation Research Statement

- ▶ John Dewey: “**experience**” and “**inquiry**” and “**curriculum**” (1902/1956; 1938; 1938/1991):
- ▶ Educational technology paradigms based on social constructivism (like CSCL) therefore emphasize three interdependent aspects of learning:
 1. **social behavior**
 2. **cognitive processes**
 3. **pedagogical technologies**

Three distinct lines of empirical research have demonstrated that:

- ▶ *culture affects social behavior* (E. Hall, 1966; Hofstede, 1997);
- ▶ *culture influences cognitive processes* (Nisbett & Norenzayan, 2002); and
- ▶ *culture influences online learning pedagogies* (Hewling, 2005; Kim & Bonk, 2002)
- ▶ **Culture as a variable of interest has not been actively considered in experimental studies of human-computer interaction (HCI) and educational technology paradigms.**
- ▶ Integrating these three lines of empirical research into a conceptual framework of *culture, technology and learning*, this project investigates the basic question of

(how) does culture vary the social affordances of technology?

Research Questions

- ▶ **R1.** To what extent does culture influence how a participant **appropriates the affordances** of a technology environment as means for interacting with others?
- ▶ **R2.** To what extent does culture influence **technological intersubjectivity**?

Operational Definition of Culture

- ▶ **Culture: As a Cognitive Schema**
 - ▶ Cultural schemas are putative structures; they are properties of an individual's mind.
- ▶ **Definition of Culture:**
 - ▶ “*the collective programming of the mind which distinguishes the members of one group or category of people from another*” (Hofstede, 1997, p. 5).
 - ▶ Collective programming of the mind in the sense of Vygotsky's **social formation of the mind** (Wertsch, 1985).
 - ▶ Subjectivity & Identity
 - ▶ Being & Becoming

Theoretical Framework

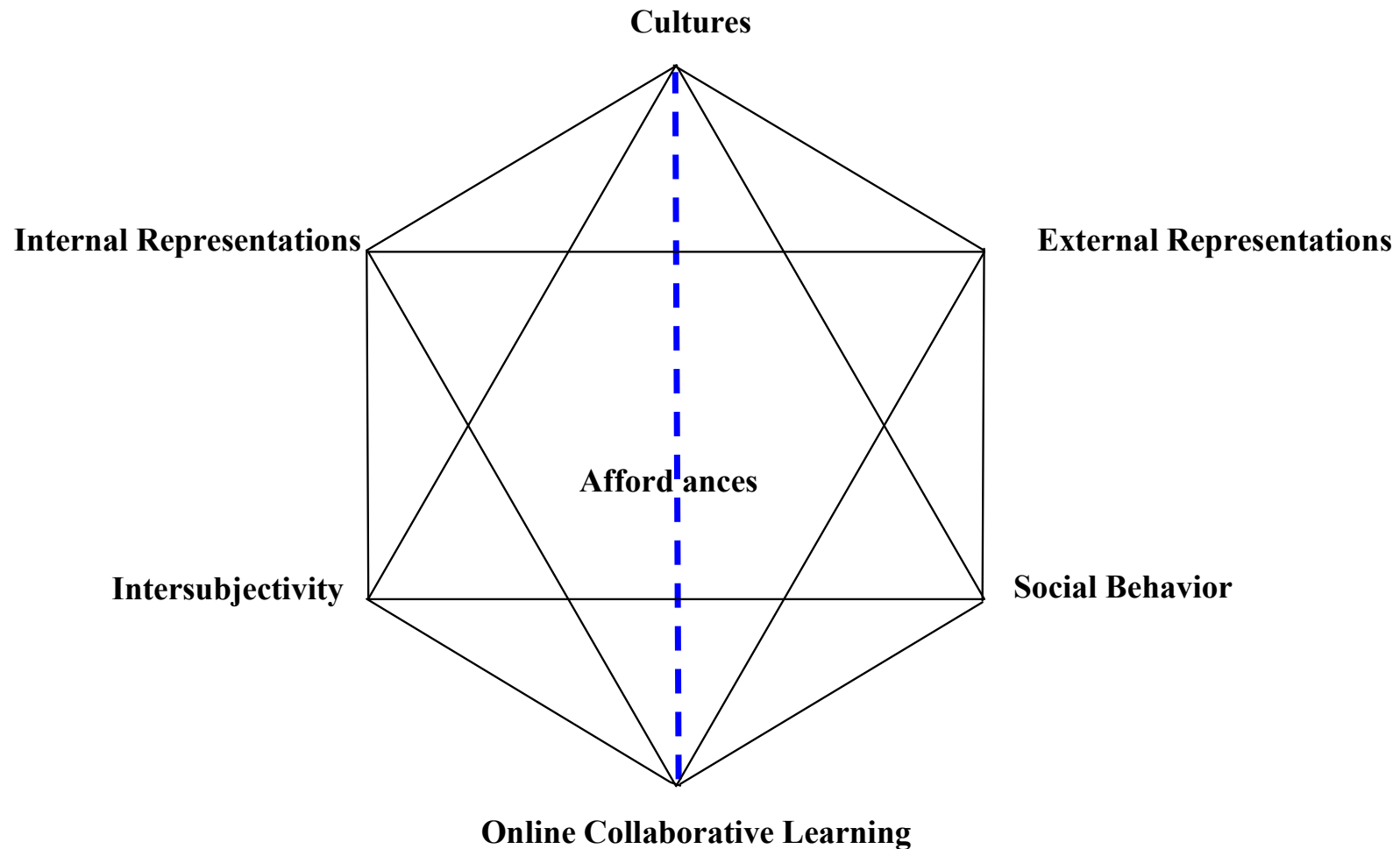
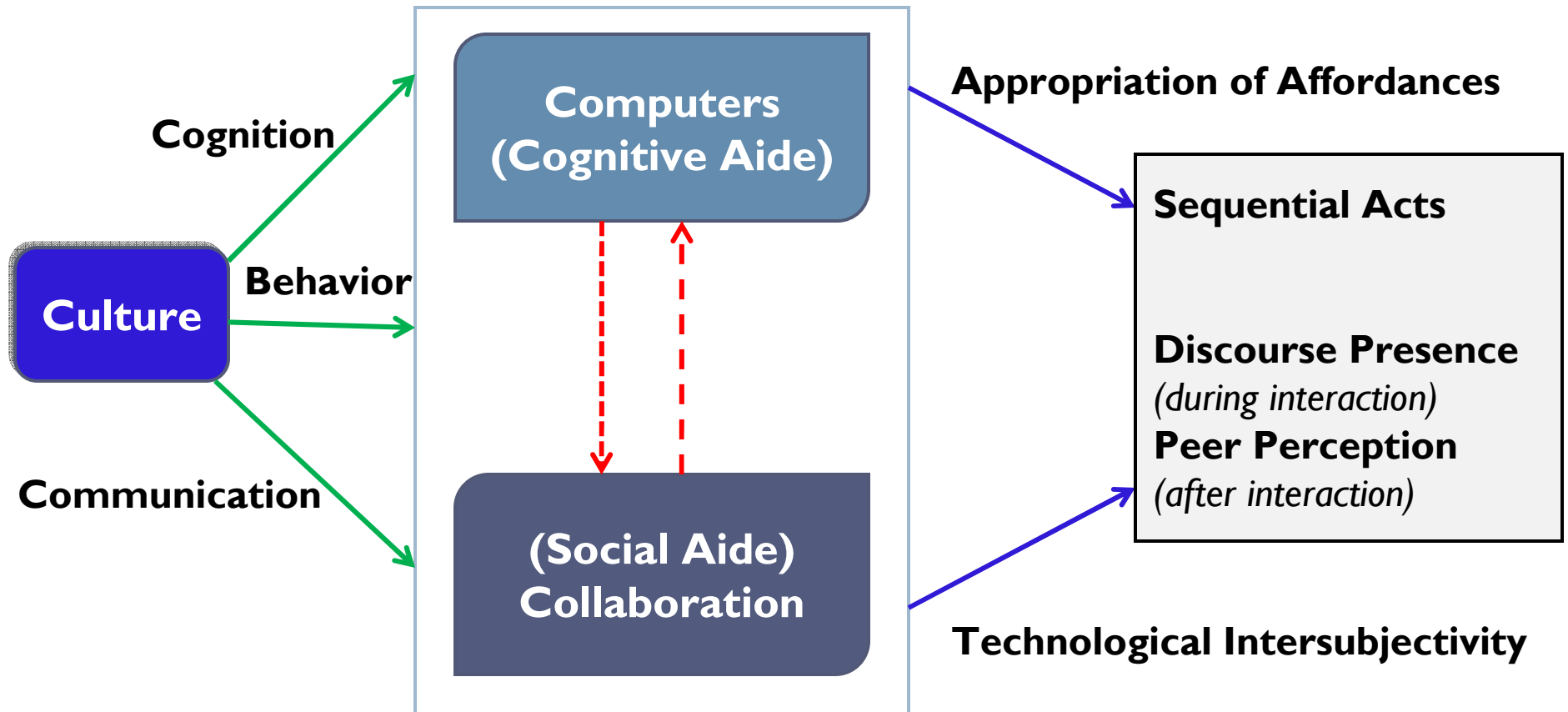


Figure A: Theoretical Framework

Methodological Framework

Learner-Environment System



Method: Experimental Design

Dyad's Cultural Profile	Measures of appropriation of affordances	Measures of technological intersubjectivity
East-Asian East-Asian		
Anglo-American Anglo-American		
Anglo-American East-Asian		

Table A: Experimental Study Design

Method: Materials: Software

Collaborative Representation Study Application - P1

Home Back For... Refr... Play Game

Materials:

Protect the Islanders from the Muscle- and Mind-killers

You have been hired by the United States Department of Health to conduct an investigation into a mysterious disease that, for the past century, has been inflicting residents of the U.S. territory of Guam, a small Pacific island that lies some 3,700 miles west of Hawai'i. The disease affects the neurological system. Many people with the disease lose control of their muscles and become rigid and paralyzed. Others lose their memories. Westerners have labeled the disease *Guam PD* and *ALS*, the Chamorros (native Guamanians) call the disease *lytico* and *bodiga*.

Your mission is to find out the cause of this disease, so that the government might prevent it in the future.

You are working with one collaborator who is on the other side

Discussion

Post New Topic

- > New Thread
- > New Thread
- > New Thread
- > NFT

Title: Expanded Hypothesis

Text: Guamanians have a diet of high toxicity. If not processed properly the food they are eating [] and [] the pollen they are inhaling are causing paralysis. Their brains may already be susceptible because of the high levels of aluminum in their water and soil. [] [] Research indicates that high levels of aluminum in the brain correlate to

Post Cancel

Expand All Collapse All

Unread Messages: 0 Unread Nodes: 1

start participant C:\WINDOWS\System... Collaborative Repres... 12:36 PM

Hypothesis

People from Guam have a diet of high neurotoxicity. The soil and water samples indicate they are absorbing a lot of aluminum. Aluminum, leaves the people more susceptible to the toxins in their food which is what makes ALS a disease unique to them. Their diet and the process of aluminum absorption causing neurofibrillary tangles results in the neurological disease ALS that is unique to Guam.

Data

- Guam diet fading if they are not properly processed they can cause vomiting, liver damage and even death. There is also evidence they have neurotoxic effects. To remove the toxins, different methods of processing are used.
- Microscopic examination of Alzheimer patient brain tissues reveals small bundles of material called senile plaques, scattered throughout the brain. The more senile plaques, the more likely the patient is to have Alzheimer's disease.
- Cycad Pollen is Toxic
- Bats Skins High in Toxins
- AlMAA-fed Monkeys Exhibit Signs of ALS-PD
- Kuru was the first chronic degenerative disease of man
- Doctors checking hospital
- abnormal clumps (now called neurofibrillary tangles) are
- Neurofibrillary tangles are
- Studies of rabbits exposed to intranasal Aluminum salts
- Five separate population studies have shown
- Tests samples of soil and water from Guam have turned
- Tests samples of soil and water from the Ku peninsula in

Note

Microscopic examination of Alzheimer patient brain tissues reveals small bundles of material called senile plaques, scattered throughout the brain. The more senile plaques, the more likely the patient is to have Alzheimer's disease.

Clear Send

Discussion

- ▶ *Critiques, Questions, Suggestions, Comments and Opinions*

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Thank You!

As a token of appreciation:

- ▶ For my persevering PhD peers:

<http://www.phdcomics.com>

- ▶ For those of us long suffering perennial graduate students:

Douglas, L., & George, A. (2005). Advanced Symptoms of Advanced Degrees. *Chronicle of Higher Education*, 51(26)

- ▶ If you want to read something different, far from maddening single-subject specialization research literature:

Nisbett, R. E. (1990). The Anti-Creativity Letters: Advice from a Senior Tempter to a Junior Tempter. *American Psychologist*, 45(1078-1082).

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