Observing Earth thru the Cognito-scope
Cognitive activity on Earth as seen through the Cognito-scope
Features of cognition (seen thru Cognito-Scope)

Laboratory
- Uncommon
- In captivity
- Isolated
- Poor Meta-cognition
- Experimenter defines
- Special purpose skills
- Novel tasks
- One-time performance

Everyday
- Common
- In the Wild
- Ecological
- Rich Meta-cognition
- Actor defines
- General abilities
- Familiar tasks
- Repeated performances
Our BIG problem

- Our minds are trained/adapted to systematically **NOT see** many aspects of the organization of activity.
- This happens at all levels of organization.
- You think you are seeing the world you live in, but **most of the interesting detail** – most of the details that must be understood in order to understand cognition in this world - **goes unnoticed**.
Manifestations of the problem

• We consider our own daily lives to be **routine** and uninteresting so we do not attend to the details.

• We **fill in gaps** in visual scenes, thereby failing to **see** the gaps. We rely on the world to provide consistency. (Can you draw the heads side of a penny?)

• We **ignore** the **background** in scenes in order to better **see** the figure.
More manifestations of the problem

• We do not hear disfluencies in speech unless they are overwhelming.

• If we are lucky, we remember the gist of what people say to us. We rarely remember the words they used to say it. When we are not so lucky, we remember what we expected or wanted someone to say, and not what they said at all.
More manifestations

• We **understand** the **world** through **cultural models** that make some things obvious and make other things impossible to think. We almost **never see** the cultural models that structure our understandings.

• We effortlessly process **multiple sources of information**, yet we rarely attend to the relations among these sources.
What can we do?

- We need tools and techniques to overcome the many manifestations of the seeing-but-not-seeing problem.
It is not going to be easy.

• “The psychological laboratory is the easiest setting in which to work, but it is also among the least interesting”

• “The realistic study of memory is much harder than the work we have been accustomed to.”

• To find out about how people make use of the past in their everyday lives, we must look carefully at the everyday world.
What is cognitive ethnography?

• Accurate records of specific instances of real world behavior.

• Analysis of the cognitive aspects of those instances.

• Use wider ethnography as a source of knowledge about what is being done, what resources are available for doing it, what conventions are used.
Cognitive Ethnography method

• Careful examination of the details of small events
• Grounded in and informed by rich ethnographic knowledge
Places to find cognition
Five Contributions of Cognitive Ethnography

1. Understanding cognitive ecology
2. An improved functional specification for the human cognitive system
3. Documenting the distribution of cognitive processes across space, time, and society
4. Informing experimental studies
5. Informing design of human systems
A cultural model is…

A cognitive schema that is intersubjectively shared by a social group.

A cognitive schema typically consists of a small number of conceptual objects and their relations to each other.
Your sense of reality is grounded in cultural schemas

- When events are interpreted using cultural models (intersubjectively shared cognitive schemas) the interpretations are treated as if they are obvious **facts** about the world.
The essence of professional vision

• “Central to the social and cognitive organization of a profession is its ability to shape events in the domain of its scrutiny into the phenomenal objects around which the discourse of the profession is organized…”
A policeman using a tool: the kick
Three important discursive practices

• Coding schemes
• Highlighting
• Production of graphical representations

• Rituals
• The exhibition of symbols
Where is the cognition?

The high-level process competent categorization is brought into existence by the engagement of low-level processes in cultural practices.
Seeing in the world

• “[Professional] vision is not a purely mental process but instead is accomplished through the competent deployment of a complex of situated practices in a relevant setting.”
These are not special cases

• “the configuration of practices investigated in this article are generic, pervasive, and consequential in human activity.”

• “processes of classification are central to human cognition.”

• “the ability of humans to modify the world around them … is as central to human cognition as processes hidden inside the brain.”
Figure 4.1. Three-dimensional representation of male social types (Stress = .147)
The dialectical constitution of arithmetic in grocery shopping activity
The setting of the setting

- Political economy and the creation of arenas and institutions
- Ideology and rationalization in institutional context
- The background conditions for the employment of discursive practices
The science of culture and cognition

- Researchers go far from home
- Observe phenomena
- Create inscriptions
- Bring the inscriptions home
  - where they are collected and compared
  - and enter into agonistic encounters with the inscriptions of others
A case in progress

Litigant presents

Dispute

Judgment
Explanations for the great divide between US and THEM

• Economic forces
• Evolution of the human brains
• A lucky run of scientific geniuses

– These explanations assume commensurability of cause and effect

• The production and circulation of inscriptions?  What!?
Properties of inscriptions

- Mobile
- Immutable
- Flat
- Scalable
- Reproducible
- Combinable
- Superimposable

- Merge with written text
- Merge with geometry
Cascades of Inscriptions

Confusing world

abstraction
power
cost

Agonistic Encounter
• *Anything* that will accelerate the mobility of the traces that a location may obtain about another place, or *anything* that will allow these traces to move without transformation from one place to another, will be favored.
• Scientists start “seeing” something once they stop looking at nature and look exclusively and obsessively at prints and flat inscriptions.

• Defining the act of seeing inscriptions. Professional vision
The Great Reunion

The Human Story

In three acts
• The Diaspora
  – Slow expansion out of Africa and across the face of the earth
• The long separation
  – 60,000 years of independent development
• The sudden reunion
  – 600 years of mutual discovery and interaction
Human Migrations
According to Mitochondrial population genetics
The world’s language groups

Some examples of the language groups:

- Afro-Asiatic
- Niger-Congo
- Nilo-Saharan
- Khoisan
- Indo-European
- Germanic
- Albanian
- Romance
- Slavic
- Indo-Iranian
- Baltic
- Caucasian
- Altaic
- Turkic
- Mongolic
- East Siberian languages
- Uralic
- Dravidian
- Sino-Tibetan
  - Chinese
  - Burmese-Tibetan
- Austro-Asiatic
- Austronesian
- Papuan
- Pama-Nyungan
- Tai-Kadai
- Na-Dene
- Eskimo-Atayaukt
- American Indian
- Alga
- Uto-Aztecan
- Mayan
- Andean
- Austronesian
- Brazilian indigenous
- Isolate
Colonial Holdings 1900
Independence Day

• Us and Them
• The threat of loss of cultural diversity
• Extinction of languages
Selassie’s speech

• That until the philosophy which holds one race superior and another inferior is finally and permanently discredited and abandoned; That until there are no longer first-class and second class citizens of any nation; That until the color of a man's skin is of no more significance than the color of his eyes; That until the basic human rights are equally guaranteed to all without regard to race; That until that day, the dream of lasting peace and world citizenship and the rule of international morality will remain but a fleeting illusion, to be pursued but never attained; …
Big Picture

- 60,000 ybp Out of Africa
- 6,000 ybp Agriculture, cities, writing
- 600 ybp Colonial expansion
  - Great reunion begins
- 60 ybp End of colonial period
  - begin cold war
- 6 ybp End coldwar
  - begin new religious war?
- 6 months bp Obama elected
- 6 hrs bp Obama declares religious war off!
US versus Them

An idea whose time has passed