

Why *Cognition in the Wild*?

- Cognitive anthropology, following cognitive science left society and practice behind
- Culture as ideas - the **idea**tional definition
- Culture only affects content of thought
- An obsolete division of intellectual labor -
 - psychologists can be responsible for process,
 - anthropologists deal with content.

What is Cognition in the Wild?

- Human cognition in its natural habitat -
 - naturally occurring,
 - culturally constituted
 - human activity.
- Contrast cognition in captivity.

Cognitive Ecology

- Human cognition adapts to its natural surroundings (Leaky mind).
- Multiple time scales
 - on-going activity
 - learning in a lifetime
 - historical changes in activity systems
 - evolution of the human mind

Why Ship Navigation?

- Navigation is an interesting and complex, obviously cognitive, human activity system with a long, well-documented history.
- In order to understand human cognition we **must** carefully observe the complex ways in which cognition adapts to naturally occurring culturally constituted activity.
- This can only be done by attending to the fine details of some real activity system.

Why Ship Navigation?

- The focus is on navigation to the extent that it is necessary to understand how cognition is situated in that activity.
- The discoveries to be made here are about **cognition**, not about navigation.

What is Ethnography?

- The scientific study of culture...especially using participant observer methods.
 - live in a community
 - learn the language
 - do what the members of the community do
 - learn to see the world as it is seen by the natives

Trobriand Islands, Papua New Guinea



Airline Cockpit



747-400 Over the North Atlantic

The Ethnographer's responsibility

- To understand what things mean and why things mean what they mean.
- To make the grounds for interpretation explicit.
- This goes beyond just becoming a member of the community.

Navigation team on the bridge of the Palau



Navigation Duties

- Safety and accountability
- Advice for conning officer
- Limited set of well-understood problems
- Event driven - cannot quit or call "time out".

Researcher Duty

- Civilian scientist
- Recording data
 - notes
 - audio and video recordings
 - still photos
- Transforming the data into other representations so that the cognitive properties of the system are visible.

Three kinds of space that matter for cognition

1. Physical space
Street, base, ship, navigation bridge
 2. Social space
Civilian, military, navy, amphib navy, QMs
 3. Conceptual space
Everyday wayfinding, technology-based professional navigation
- What information goes where, when, in what form?

Why physical space matters

- What is near to what
 - What can be seen from each position
 - Architecture and cognition
 - How bodies fit in space
-
- Arrangements of physical space affect where information can easily go.

Why social space matters

- Social organization (groups, identities, statuses, roles, and ranks) all affect the flow of information.
 - They therefore affect the cognitive properties of social groups.
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- Social arrangements affect where information is likely to go.

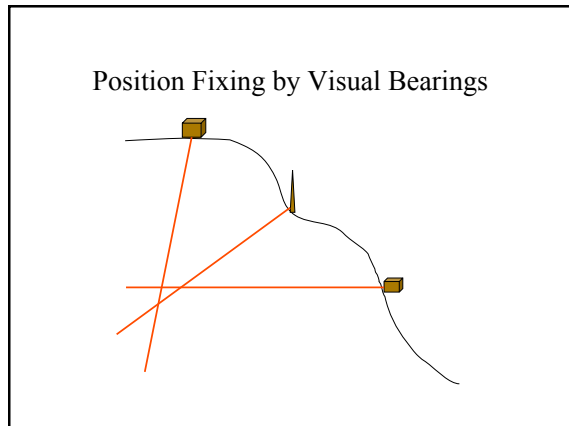
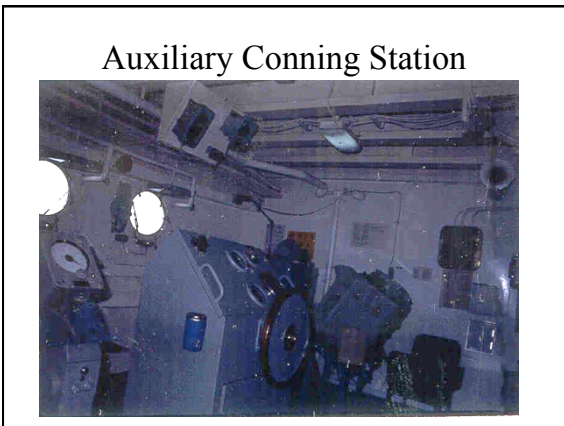
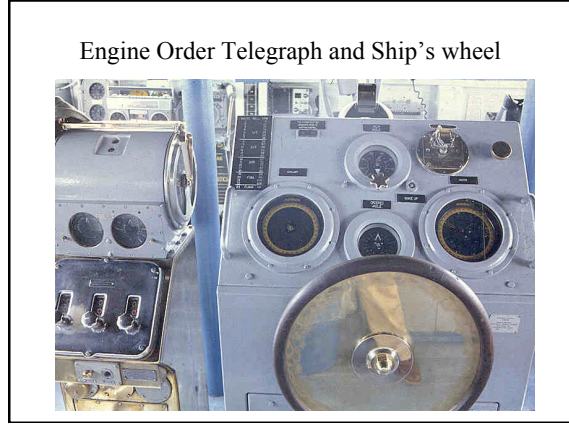
Why conceptual space matters

- The conceptual structures of ship navigation determine the content of the information and the organization of the representations in which information is encoded.

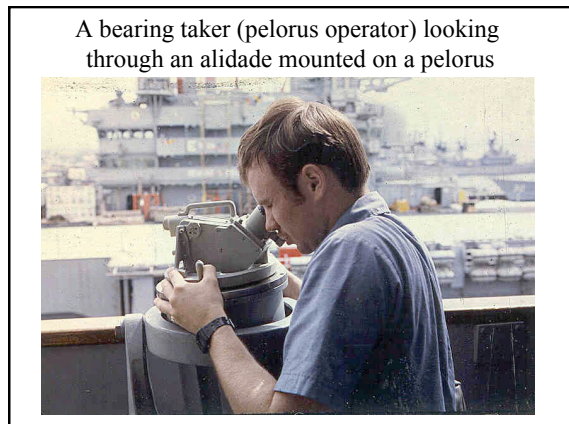
Finding out what people do

- Read the standard procedures (only the beginning)
- Observe and document actual work practices.

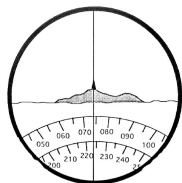




What information goes where,
when, in what form?
Tools determine the forms of
information



View through the Alidade

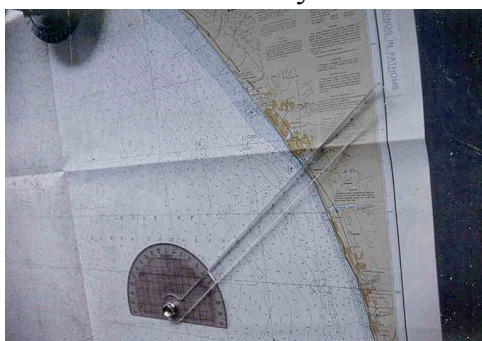


The outer azimuth circle provides bearing with respect to ship's heading. The inner azimuth circle is slaved to the gyrocompass and provides bearings with respect to true north.

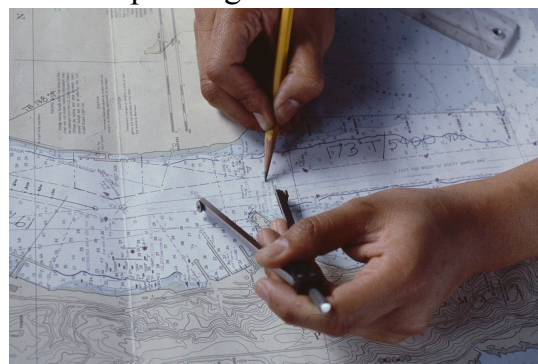
The chart table



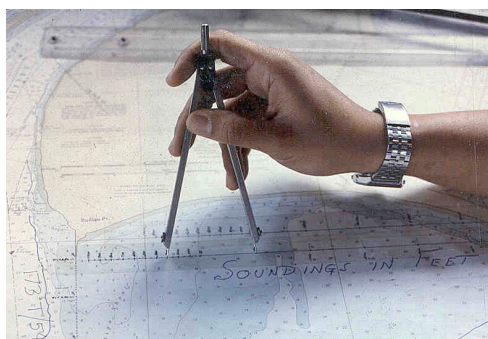
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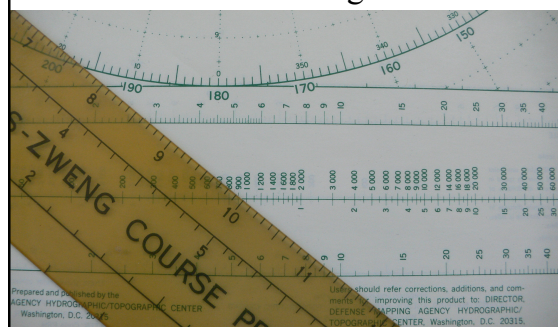
Spanning a distance run



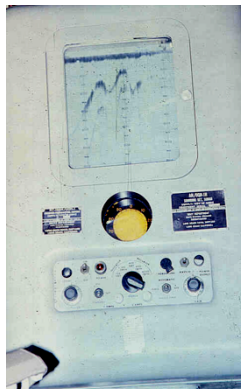
Reading distance (or speed) on the yard scale



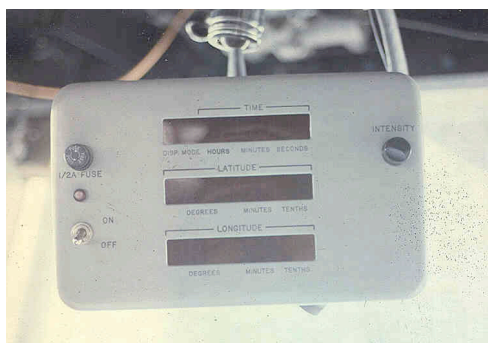
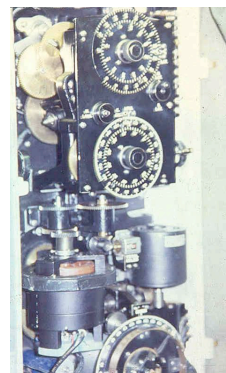
3-scale nomogram



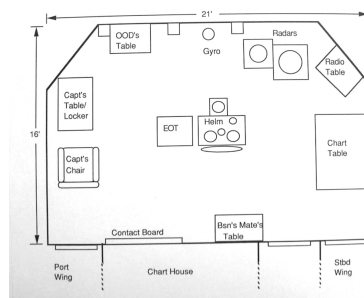
Fathometer/
Depth Sounder



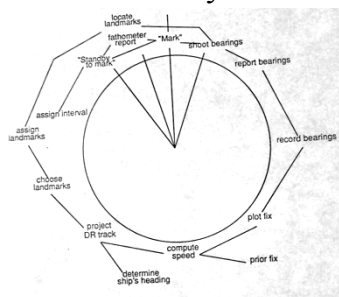
DRAI



Bridge Layout



The Fix Cycle



Things to do

- Do the plagiarism tutorial and quiz
- Log in to CPR
- Begin writing for exercise #1

Always be asking this question

- What information goes **where**, **when**, in **what form**?
 - Physical space
 - Social space
 - Conceptual space