Neale's Evaluation Framework

CSCW Fall 2015

Reference (see GitHub):

Evaluating Computer-Supported Cooperative Work:
Models and Frameworks
by Neale, Carroll and Rosson

Challenges of **remote** evaluation

- **Logistics** in carrying out evaluations
- Greater number of **variables** to consider
- Need to validate **reengineered work** based on CSCW concepts

- Performance measures rarely good indicators for evaluating CSCW systems
  - But just looking at qualitative aspects isn't the way to go either

Long term activities and teams

- **Long term activities** are usually **goal oriented**
- Need to consider support for communication, planning, coordination of tasks, monitoring project progress, cooperation and replanning
- Need to establish support for **ongoing awareness** of all of these aspects

Groups vs Teams

- **Groups** have task structures with limited role differentiation, performance depends on **individual efforts**
- **Teams** have members with specialized roles, work together to accomplish **common goals**
- **Evaluation** is more **complex for teams** than for groups – aggregation of factors must be considered

CSCW Evaluation - Reflections

- **Workplace studies** have been mostly associated with qualitative work and ethnographic studies
- Lab studies are largely seen as ineffective for evaluating CSCW

But both paradigms of quantitative and qualitative approaches may have benefits depending on your questions

Levels of analysis in CSCW

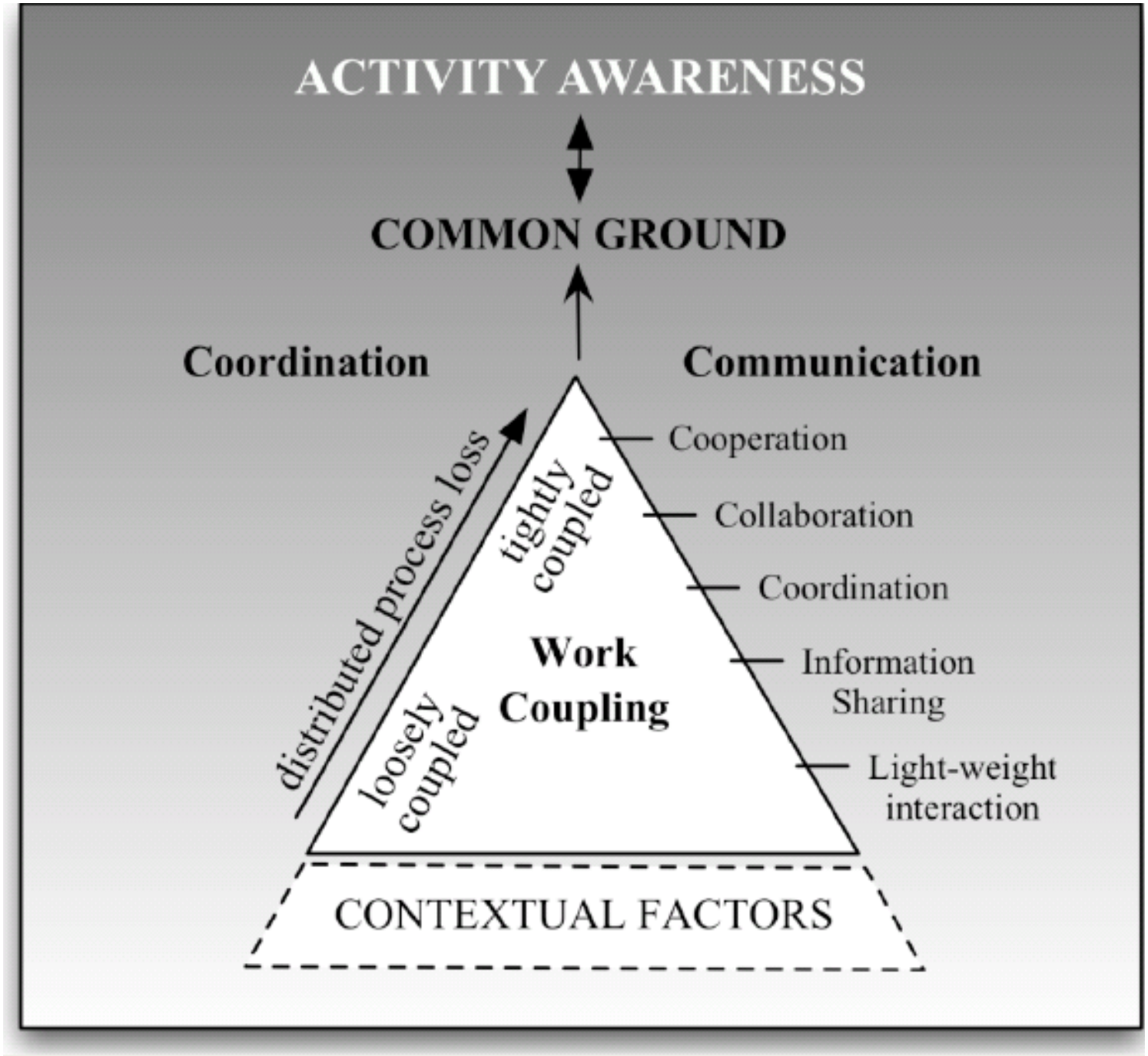
- Need to consider **individual**, **group**, and **organizational** levels of analysis
- **Theory** plays an important role in which research methods are used
- But **long term** use is also critical, over months, years and even decades
- Need to consider which **methods** will work over a long period of time

“Activity Awareness”

- Core challenge in CSCW!
- Different **types** of awareness:
  - Social awareness
  - Presence awareness
  - Action awareness
  - Workspace awareness
  - Situation awareness
- To understand the role of activity awareness, these authors propose a new **model of awareness evaluation**…

Awareness evaluation model

- Focused towards **distributed** applications
- Purpose is to indicate the important **variables** and **relationships** among them to consider during evaluation
- Understanding the variables and their relationships helps identify a starting point!


ACTIVITY AWARENESS
COMMON GROUND
Coordination
Communication
distributed process loss
tightly coupled
loosely coupled
Work Coupling
Cooperation
Collaboration
Coordination
Information Sharing
Light-weight interaction
CONTEXTUAL FACTORS

Contextual Factors

- **Unit of analysis** shifts from human action to comprehensive activities
- Activities are ongoing, span across **people**, **locations** and **time** – thus need to understand contextual factors which underlie all collaborative activities and shape how the work is structured
- Unfortunately **distributed systems** often **elide** the **contextual factors** – thus leading to surprise breakdowns

Work coupling and communication

- **Work coupling** refers to the amount of information sharing and communication needed to meet the demands of work
- Note that the **granularity** of dependencies between group members varies

5 Levels of Work coupling

1. **Lightweight interactions** – leading to communication about people's lives and work situations
2. **Information sharing** – bi or unidirectional – helps with understanding of what is going on
3. **Coordination** – requires both activities and communication to be coordinated
4. **Collaboration** – involves members moving towards a common goal
5. **Cooperation** – shared goals, common plans, shared tasks, significant consultations

Team Coordination

- Coordination can be characterized by **processes**, **procedures**, **tasks**, **tools** and **awareness**
- Again **time** is a key concept – sequence of events and timing dependencies need to be considered
- **Shared artifacts** may be important coordination devices
- But coordination can be viewed as **overhead**
- The more awareness there is, the less need for coordination – joint awareness is their **"common ground"**

Common Ground

- **Joint awareness** that people share is their common ground
- It is the **knowledge** that each believes the other shares in common with them
- There is a need to **continually update** their common ground – this is called **"grounding"** – a joint effort on the part of both people
- Awareness is both a **product** and a **process**
- The amount of context group members share makes a big difference in the quality of their common ground

Collaboration success wizard

- See Judith Olson's talk: https://www.youtube.com/watch?v=GlHd5GsXpJ8