

# Team-Based Interaction

C.W. Johnson,

University of Glasgow,  
Glasgow, G12 8QQ.  
Scotland.

johnson@dcs.gla.ac.uk,  
<http://www.dcs.gla.ac.uk/~johnson>

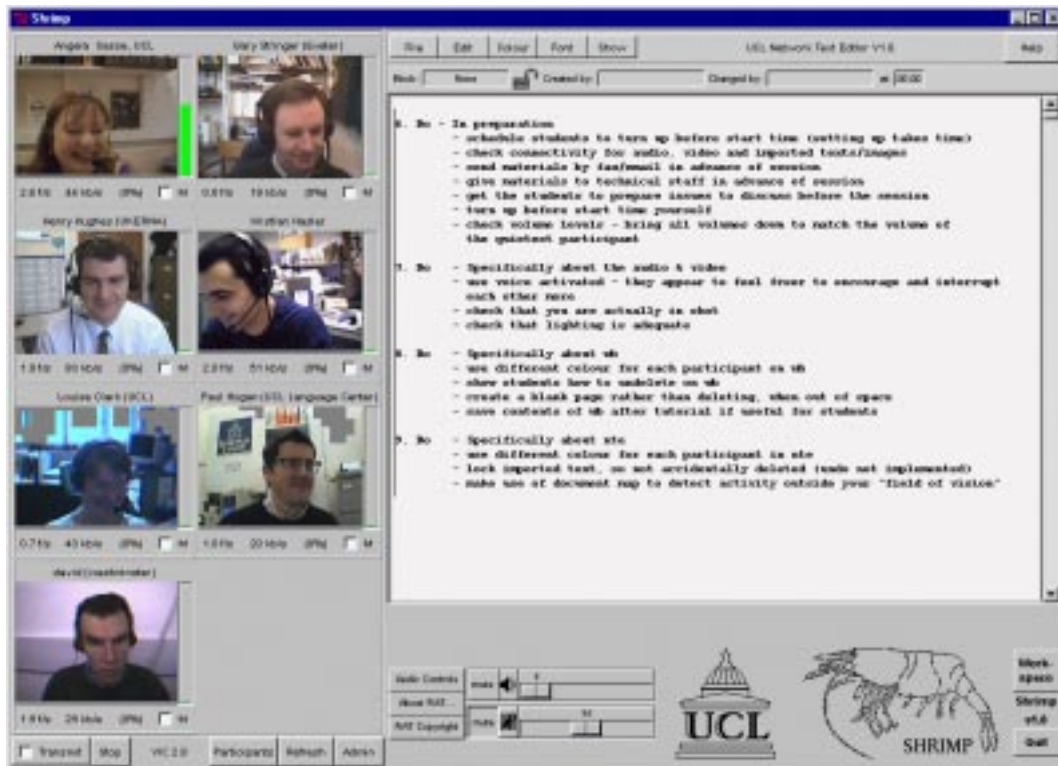
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# Team-Based Interaction

- Computer-Supported Cooperative Work.



Acknowledgement: Shrimp project

- Synchronous vs Asynchronous interaction.
- Clark, Brennan and Common Ground.

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# Problems of Groupwork

- Why is groupwork difficult?
  - Distraction:
    - individual interrupts colleague's tasks.
  - Group coordination failures:
    - overhead of coordinating group actions impairs group.
  - Group planning and management failures:
    - groups create unnecessary tasks.
  - Excessive influence of the leader:
    - high status leader stifle contrary opinions.
  - Group polarisation and groupthink:
    - group persuaded by dillusions of its own invulnerability.

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# Problems of Groupwork

- Computers make things worse.
- Free-riders: “it’s lost in the mail” .
- Distractions and group planning:
  - encysting can be a problem.
- Influence of the leader:
  - can ‘freeze’ people out of video-conferences.
- Group coordination much worse:
  - “can you all hear me?” .

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# Computer-Supported Cooperative Work (CSCW).

- Face to face: same place, same time.
- Synchronous: different place, same time.
- Asynchronous (1): different place, different time.
- Asynchronous (2): same place, different time.

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## Face to Face

- Applications:
  - share a computer to record design decisions;
  - use computer to share visualisations.



Acknowledgement: Faculty of Science, Loughborough Univ.

- Fighting over access to the input devices?
- One person thinks while the other types 8(

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# Asynchronous CSCW

- Relatively simple add-on to existing systems.



- Need for version control on shared objects.

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# Asynchronous CSCW

- Applications:
  - electronic mail, new and bulletin boards;
  - increasingly used to provide 24 hour cover.



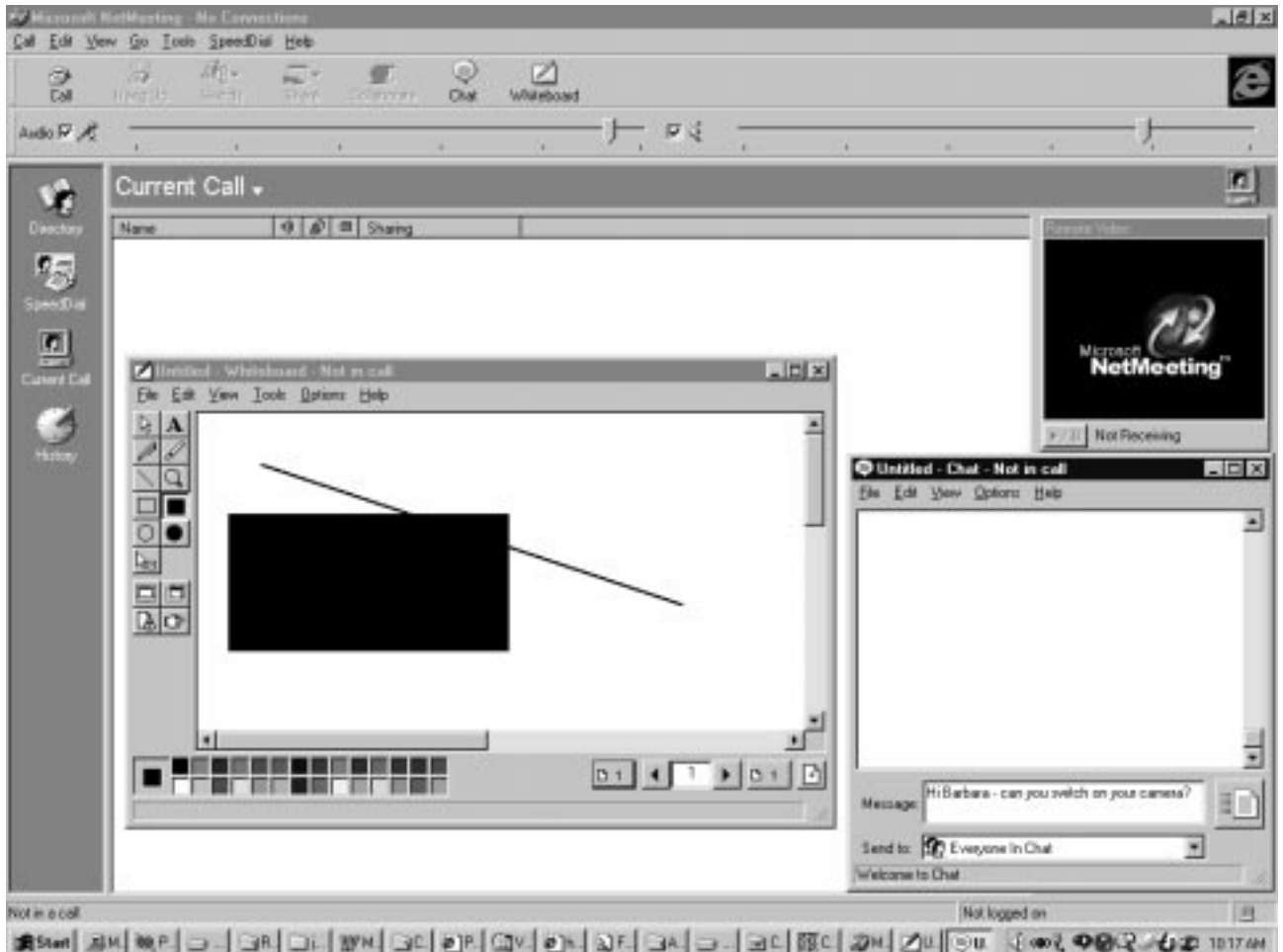
- Need to establish the context of messages:
  - remember that messages will arrive out of order;
  - threads in postings and use of Re: in mail.



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# Synchronous CSCW

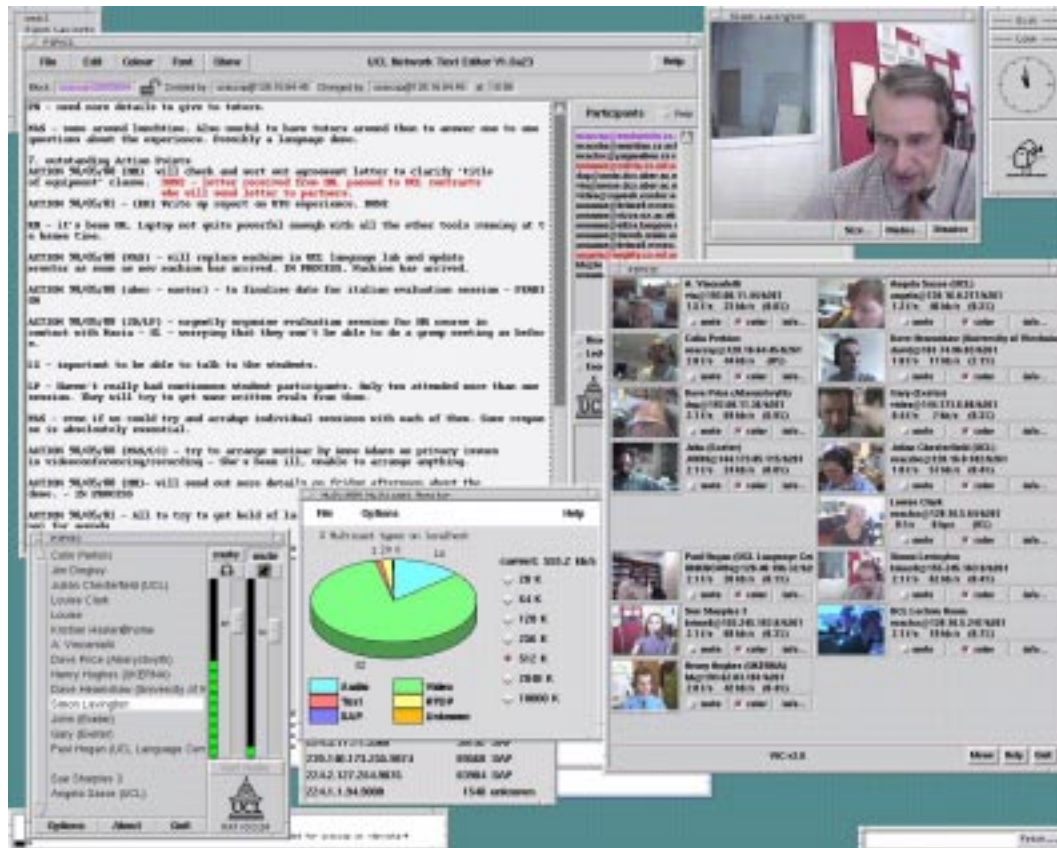
- Integrate different modes of communication.



- Applications:
  - NetMeeting and video conferencing;
  - shared editing tools and CAD/CAM systems;
  - games and MUDS (multi-user dungeons).

# Synchronous CSCW

- Need access control mechanisms.



Acknowledgement: Shrimp Project

- Two types:
  - social convention ('after you...');
  - technological (locking systems).

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# Synchronous CSCW

- Access rates:
  - better links/equipment give better response;
  - this can have social/interaction effects.
  
- Frustration over delays:
  - jitter and quality of service.
  
- Need for conflict resolution:
  - lock object while you are working on it?
  - allow concurrent edits then resolve conflicts?

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# Common Ground

- Clark and Brennan:
  - conversations to establish common ideas.

Cost	Description
Formulation	formulate and reformulate utterances
Production	producing the utterance
Reception	receiving a message
Understanding	understanding a message
Start-up	starting a new discourse
Delay	planning and revising before execution
Asynchrony	timing of discourse exchanges
Speaker change	changing speakers
Display	presenting an object of the discourse
Fault	producing a mistake
Repair	repairing a mistake

- If you say something but are misunderstood then
  - you have to initiate a repair conversation;
  - this is the cost of establishing common ground.

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## Common Ground

- Analyse transcripts to support design.
  
- Problems with speaker change:
  - consider dialogue control measures?
  - look again at locking techniques?
  
- Lots of repair activities:
  - provide greater view of colleague's work?
  - possibly add video to audio communications?
  
- Problems with delay:
  - must see changes made while planning last message?

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# Summary

- Problems of groupwork.
  
- Computer-Supported Cooperative Work:
  - face to face interaction;
  - synchronous interaction;
  - asynchronous interaction.
  
- Clark, Brennan and Common Ground.

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## Further Reading

- Shneiderman on:  
- CSCW - pp. 477-502.