

Overview of Interaction Beyond the Individual

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"Interaction Beyond Individual"

CHI subcommittees first came into being in 2009. At this point, CHI started to refer to CSCW as “Interaction Beyond Individual”, and here are the definitions (2009 & 2022):

2009: *“This subcommittee will focus on papers which consider aspects of interaction which extend beyond a single user. These contributions will be judged in part by their extension of knowledge about large and small groups of people's interaction with technology and with each other through technology and/or by their innovation in creating new systems or techniques to support these interactions.”*

2022: *“This subcommittee is suitable for papers that contribute to our understanding of collaborative technologies for groups, organizations, communities, and networks. Successful submissions will advance knowledge, theories, and insights from the social, psychological, behavioral, and organizational practice that arise from technology use in various contexts. This subcommittee is also suitable for submissions describing collaborative or crowdsourcing tools or systems.”*

What are the differences? Why?

Very Brief History of CSCW

“In theory, CSCW could cover any aspect of cooperative work in which digital technology plays a role. In practice, the CSCW research field reflects the interests of its participants”

Changing of the technology landscape



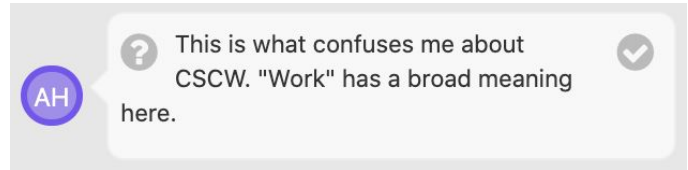
email and
videoconferencing prototypes
small-group interaction, such as collaborative text
editing and drawing
interaction within units of all sizes, using both fixed and
mobile technologies
Social media are now a major focus.

The NLS System (Engelbart, 1967)

Very Brief History of CSCW

“In theory, CSCW could cover any aspect of cooperative work in which digital technology plays a role. In practice, the CSCW research field reflects the interests of its participants”

- Supporting Groups, Organizations, and Communities
 - small groups, teams, projects, organizations, and communities
- Started from supporting cooperation in workplace, but expanded more into different types of **"Work"**

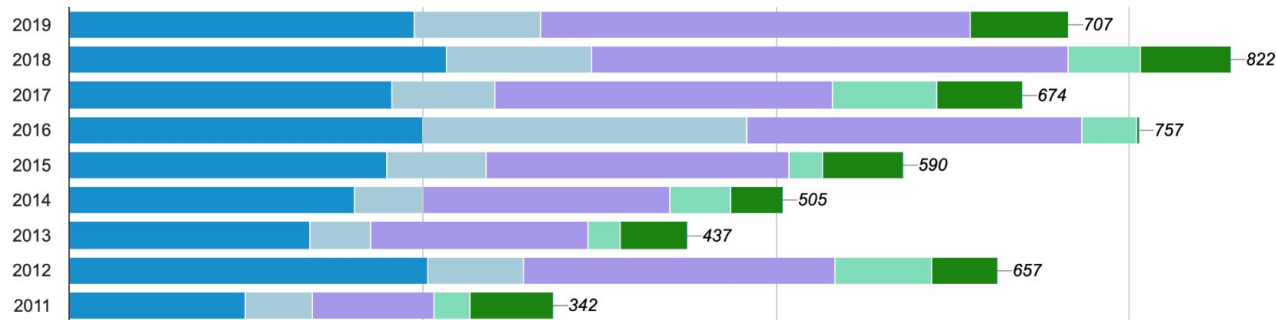


*"CSCW encompasses **collaboration that uses technologies we do not call computers**, collaboration in which **technology plays a central rather than a support role**, uses that involve conflict, competition, or coercion **rather than cooperation**, and studies of **entertainment and play**." (Grudin)*

History of CSCW (the field & the conference)

- **"Computer-Supported Cooperative Work"**, term coined 1984 (Irene Greif & Paul Cashman) for understanding collaboration
- First Conference: 1986 - emerging client-server PC and workstation networks
- Held every other year from 1986-2008
- Held annually starting from 2010 (While GROUP (97-) stays biennially)

CSCW Attendance



History of CSCW (the conference)

Changed to **Conference On Computer-Supported Cooperative Work *And Social Computing*** starting 2013 ([reference](#))

Twenty-five years after its founding, the CSCW community concluded that it had been boiled. Its name no longer reflects the group's activity. Each word in "Computer Supported Cooperative Work" has lost its relevance. (Grudin, 2010)

C: Computers are no longer the only digital devices of interest.

S: Digital technology is no longer confined to a support role; it is integral to many activities.

C: The focus was initially on small groups for which cooperation was the norm, but today's digital world features hacker attacks, spam, privacy concerns, conflict, and competition.

W: In 1985 systems capable of supporting groups were mainly affordable in corporate work settings. It's different now.

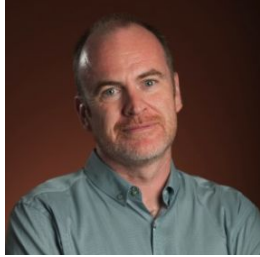
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"**Social computing** refers to systems that support the gathering, processing and dissemination of information that is distributed across social collectives.

Furthermore, the information in question is not independent of people, but rather is significant precisely because it linked to people, who are in turn associated with other people." (Erickson, 2014)

UCI has a long history of CSCW research



The Lasting Impact Award goes to a paper that is at least 10 years old and has had an impact on CSCW as a field.
In 2021, it goes to Steve Harrison and Paul Dourish for their 1996 paper, “[Re-place-ing space: the roles of place and space in collaborative systems.](#)”



Judy and Gary Olson well known for their work on collaboration in the workplace

UC Irvine Faculties and Students have been, and still are active members in the CSCW community

Overview of Conferences CfPs

CSCW 2022: “inform the design or deployment of collaborative or social systems; introduce novel systems, interaction techniques, or algorithms; or, study existing collaborative or social practices”

CHI 2022: “contribute to our understanding of collaborative technologies for groups, organizations, communities, and networks”

GROUP 2022: "open to diverse and innovative research methods, and to contributions across broad areas such as systems, society, participation, critique, collaboration, and human interaction."

What are the similarities? What differences in aim did you find while reading the call for papers?

Overview of Conferences CfPs

CSCW 2022: “inform the design or deployment of collaborative or social systems; introduce novel systems, interaction techniques, or algorithms; or, study existing collaborative or social practices”

CSCW encourages papers that make a contribution to building CSCW systems, including (but not limited to) engineering and technical enablers for CSCW applications, methods and techniques for new CSCW services and applications, and evaluation of both early-stage and fully-built CSCW systems in lab or field settings.

Overview of Conferences CfPs

GROUP 2022: "open to diverse and innovative research methods, and to contributions across broad areas such as systems, society, participation, critique, collaboration, and human interaction."

*In contrast to prior years, **Design Fiction** will be submitted to the main technical track. This change reflects the increased use of design fiction in related scholarly venues, and it acknowledges the first class status of design fiction as a means for contributing knowledge within our community.*

Subjects of 3 Discussion Papers

Grudin '88 - **Organizations**

Olson & Olson '00 - **Distributed Teams / Remote Work**

Lampe et al '07 - **Social Networks**

Why CSCW Applications Fail: Problems in the Design and Evaluation of Organizational Interfaces

Jonathan Grudin. [Why CSCW Applications Fail: Problems in the Design and Evaluation of Organizational Interfaces](#). CSCW (1988).

Problems in the design and evaluation of organizational interfaces.

1. The disparity between who does the work and who gets the benefit.
2. The breakdown of intuitive decision-making.
3. The underestimated difficulty of evaluating CSCW applications.

Author

Jonathan Grudin

Researcher at Microsoft (was Professor at UC Irvine, 1992-1998)

Early member of CSCW, written extensively in the field and on the development of the field



Context

Organizational interfaces, 1988

Technology landscape: The Web not yet popularized, database systems being used in workspace

Case Studies:

- Digitized voice applications
- Project management applications
- Natural language interfaces to shared databases
- Group decision support systems

Context

CSCW 2014 Lasting Impact Award (First recipient of the award)

Case Study?

"...The paper did not build on existing literature, there were no system building, no usability study, no formal experiment, no quantitative data, the qualitative data was not coded, and the paper didn't build on theory..."
(Grudin, 2014)

What type of contribution are they making?

Why is this paper influential?

Why the paper had impact.

- Timing – LANs were taking off in the late 80s.
- Luck – 2nd session of large single-track conference.
- Persistence – followed by journal article (1989), book chapter (1991), and CACM expansion (1994).

Summary


Problem 1. The disparity between who does the work and who gets the benefit

The application fails because it requires that some people do additional work, while those people are not the ones who perceive a direct benefit from the use of the application.


"Personal Secretary", "a key point (of the successful use of the electronic calendar) is that "the secretary's role is critical";


What are some modern examples of problem 1?

With the high interest in AI and automation, how has this problem changed/unchanged?




? This sentence dates this paper.
Everyone has a personal calendar.





? This still frequently comes up in recent papers. Humans' roles are critical when using automatic/AI systems.



Summary

Problem 2. The breakdown of intuitive decision-making

The design process fails because our intuitions are poor for multi-user applications – decision-makers see the potential benefits for people similar to themselves, but don't see the implications of the fact that extra work will be required of others.

***What do they mean by "intuition" here?
And how has that changed?***



Summary

Problem 3. The underestimated difficulty of evaluating CSCW applications.

We fail to learn from experience because these complex applications introduce almost insurmountable obstacles to meaningful, generalizable analysis and evaluation.

Summary

Problems in the design and evaluation of organizational interfaces.

- **Problem 1.** The disparity between who does the work and who gets the benefit.
- **Problem 2.** The breakdown of intuitive decision-making.
- **Problem 3.** The underestimated difficulty of evaluating CSCW applications.

Case Studies: Digitized voice applications, Project management applications, Natural language interfaces to shared databases, Group decision support systems

What are some issues that remained unsolved (even after 30 years)?

And what are some issues that have been addressed?

Distance Matters by Olson and Olson

Gary M. Olson and Judith S. Olson. [Distance Matters](#). Human-Computer Interaction 15, p139-178 (2000).

Context

Distance Matters



1990s

199x

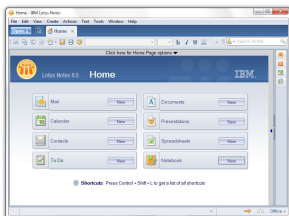
2000

2001

2007

2013

Groupware
research



Lotus Notes



Agile Manifesto



Summary

“In particular, we compare collated work with remote work as it is possible today and comment on the promise of remote work tomorrow”

Paper has two main focus points:

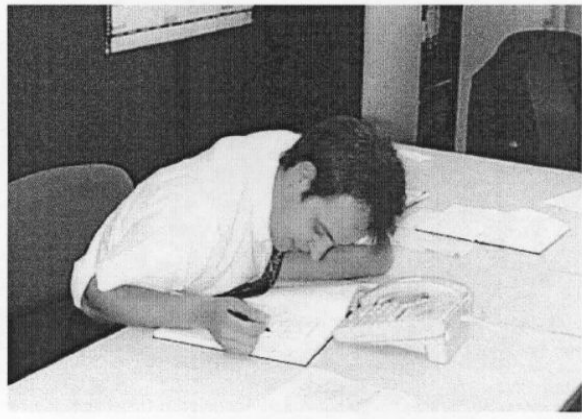
- Four concepts to consider to improve likelihood of effective remote team work
- Predictions for what the future might hold

Research Type and Methods

An essay/opinion piece or a theory?

Used their previous research and experience to come to the findings

Figure 5. A participant adjusting to the poor technology rather than requesting better technology.



Research Method

Discussion Question:

Is this a reasonable type of research method?

Findings

Four concepts are key to help remote teams be successful:

- Common Ground
- Coupling In Work
- Collaboration Readiness
- Technology Readiness

Discussion Question

Poll: Do you think the same findings would be reached today?

Predictions

Figure 10. How well today's and future technologies can support the key characteristics of collocated synchronous interactions.

Characteristic	Today	Future
Rapid feedback		•
Multiple channels	o	•
Personal information	o	•
Nuanced information	o	•
Shared local context		
Informal “hall” time before and after	o	o
Coreference		o
Individual control		o
Implicit cues		o
Spatiality of reference		o

Note. • = well supported; o = poorly supported.

Discussion Question:

Have we solved the “Future” problems?

Subsequent Research Updates

In 2008 update:

- Addition of *Management and Decision Making*

In 2014 paper revisited by different researchers ([Does Distance Still Matter? Revisiting the CSCW Fundamentals on Distributed Collaboration](#))

- Common Ground
- Coupling In Work ??
- Collaboration Readiness
- Technology Readiness??

Contributions to the Research Community

According to Google Scholar:

- Cited 2682 times
- Cited 127 times since 2021

[Distance Matters to Weak Ties: Exploring How Workers Perceive Their Strongly- and Weakly-Connected Collaborators in Remote Workplaces](#)

[PDF] [acm.org](#)

[CL Yang](#), [N Yamashita](#), [H Kuzuoka](#), [HC Wang](#)... - [Proceedings of the ...](#), 2022 - [dl.acm.org](#)

10 days ago - Workers tend to make inferences about one another's commitment and dedication to work depending on what cues are available to them, affecting worker relationships and collaboration outcomes. In this work, we investigate how remote work ...

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[From collaborative habituation to everyday togetherness: a long-term study of use of the messaging kettle](#)

[PDF] [acm.org](#)

[AH Ambe](#), [A Soro](#), [D Johnson](#), [M Brereton](#) - [ACM Transactions on ...](#), 2022 - [dl.acm.org](#)

17 days ago - We present a long-term study of use of the Messaging Kettle, an Internet of Things (IoT) research prototype that augments an everyday kettle with both sensing and messaging capability and a beautiful light display in order to investigate connecting ...

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[HTML] [Impression Formation From Video Conference Screenshots: The Role of Gaze, Camera Distance, and Angle](#)

[HTML] [apaopen.org](#)

[G Fauville](#), [ACM Queiroz](#), [M Luo](#), [J Hancock](#)... - 2022 - [tmb.apaopen.org](#)

18 days ago - This preregistered experiment examines the impact of three nonverbal cues displayed through video conference screenshots (ie, gaze direction, distance between the face and the camera, camera angle) on impression formation. Actors in video conference ...

☆ Save [Cite](#) [All 2 versions](#) [Import into BibTeX](#) [⌕](#)

[HTML] [Exploring the challenges of remote work on Twitter users' sentiments: From digital technology development to a post-pandemic era](#)

[HTML] [sciencedirect.com](#)

[JR Saura](#), [D Ribeiro-Soriano](#), [PZ Saldaña](#) - [Journal of Business Research](#), 2022 - [Elsevier](#)

19 days ago - The boost in the use and development of technology, spurred by COVID-19 pandemic and its consequences, has sped up the adoption of new technologies and digital platforms in companies. Specifically, companies have been forced to change their ...

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A Familiar Face(book): Profile Elements as Signals in an Online Social Network

Cliff Lampe, Nicole Ellison, and Charles Steinfield. [A Familiar Face\(book\): Profile Elements as Signals in an Online Social Network](#). CHI (2007).

Summary

Uses quantitative data from Facebook profiles to relate importance of profile data fields to number of friends in network

One of the first such pieces of research into social networks?

Research Questions:

1. What are the relationships between the various types of profile entries and the number of friends a user has on their social network site?
2. Are some types of profile entries more strongly associated with the number of friends listed?

Research Method

Empirical research, quantitative based on retrieving data from Facebook user accounts (30,773)

Draws upon three theories to explain results:

- Signalling theory
- Common Ground theory
- Transaction cost theory

One key assumption is the users know each other offline

Discussion Questions:

Does this “scraping” raise ethics questions?

Is this assumption valid in 2022?

Results

Populating profile fields on Facebook is positively related to the number of friends.

Uses the data, common ground theory and transaction cost theory to explain why completion of “common referent” fields leads to more friends

Preference data doesn't have much impact on number of friends

Discussion Question:

Do these findings hold true today?

Research Contribution

Still being cited in social network research

Klassen, Shamika and Kingsley, Sara and McCall, Kalyn and Weinberg, Joy and Fiesler, Casey, [More than a Modern Day Green Book: Exploring the Online Community of Black Twitter](#) Proceedings of the ACM on Human-Computer Interaction Volume 5 Issue CSCW 2 October 2021 Article No.: 458pp 1–29

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The discussion papers on Thursday build upon these in modern contexts:

Samrose et al '21 - **Distributed Teams** - Using AI to improve Video Conference meetings

Yao et al '21 - **Social Networks** - Online Health Communities