

COOPERATIVE WORK & ARTIFICIAL INTELLIGENCE

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Outline

- About cooperative work
- Groupware systems
- Group awareness
- COVID crisis & Home office practices
- Group awareness & AI
- Learning & AI challenges
- Concluding observations



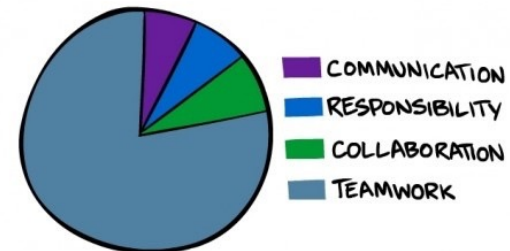
About cooperative work

- **Computer Supported Cooperative Work**
CSCW

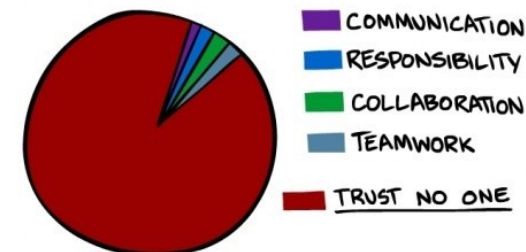
“CSCW looks at how groups work and seeks to discover how technology (...) can help them work” [Ellis 1991]

- How technology may help teamwork?
- Multidisciplinary
- Understand how groups work
- Technology & social concerns

WHAT GROUP PROJECTS ARE SUPPOSED TO TEACH YOU



WHAT GROUP PROJECTS TAUGHT ME



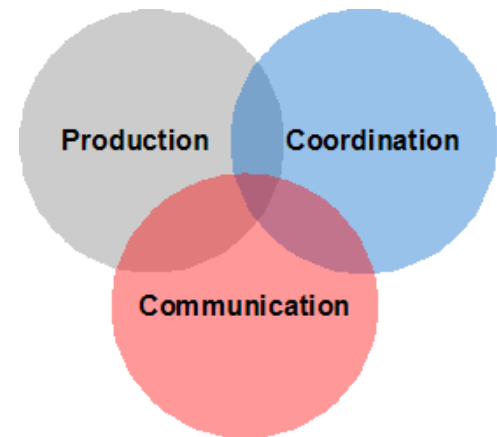
Groupware systems

- Groupware systems
 - Software applications supporting group work
 - Teamwork → common goal

“groups are different”

[Grudin1994]

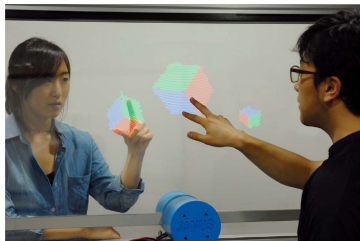
1 + 1 = 3 : obtenir plus que la
simple somme des talents



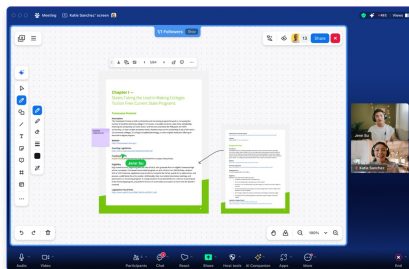
[Laurillau 2002]

Groupware systems

- Technological support for teamworking
 - Different situations, different needs → *requirements*



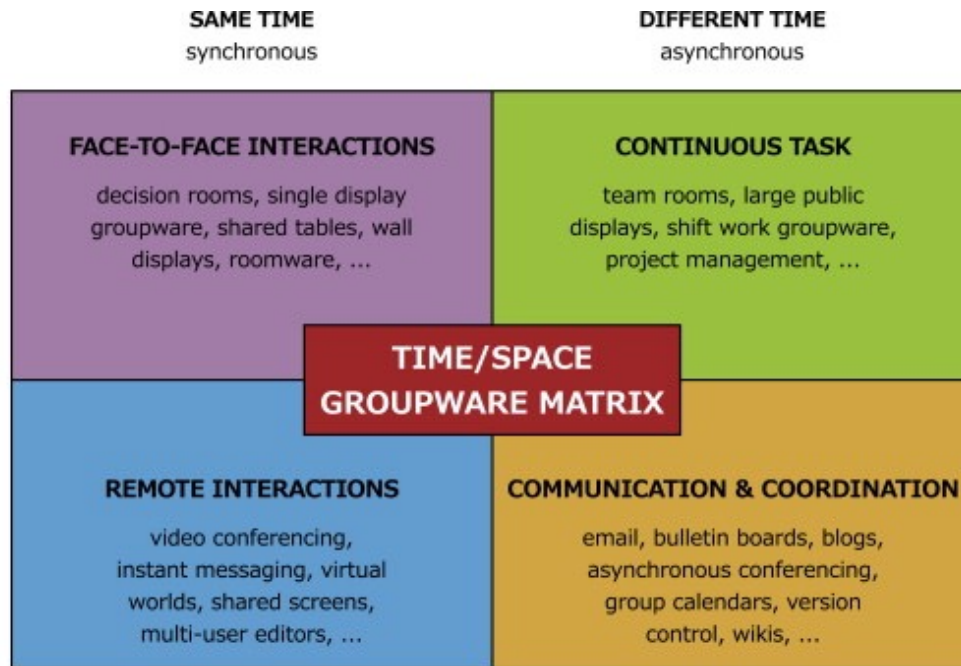
[Lee 2014]



[Zoom]

SAME PLACE
co-located

DIFFERENT PLACE
remote



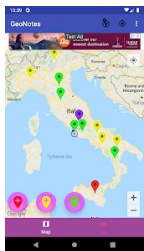
<https://ars.els-cdn.com/content/image/3-s2.0-B9780124166912000179-f17-01-9780124166912.jpg>

[Ellis 1991]

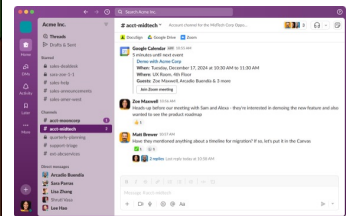


[Burrell 2002]

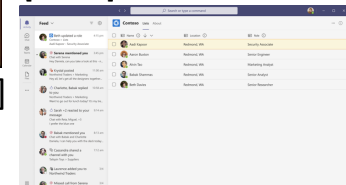
[GeoNotes]



[Slack]



[Teams]



Groupware systems

- Multiple application domains
 - Some examples...

Information Systems

Distributed teamwork
Home working

Health systems

Medical team cooperation
Homecare applications
Medical staff – family

CSCL

Collaborative Learning
Students as a team

Groupware systems

- **Groupware challenges**

Technical challenges

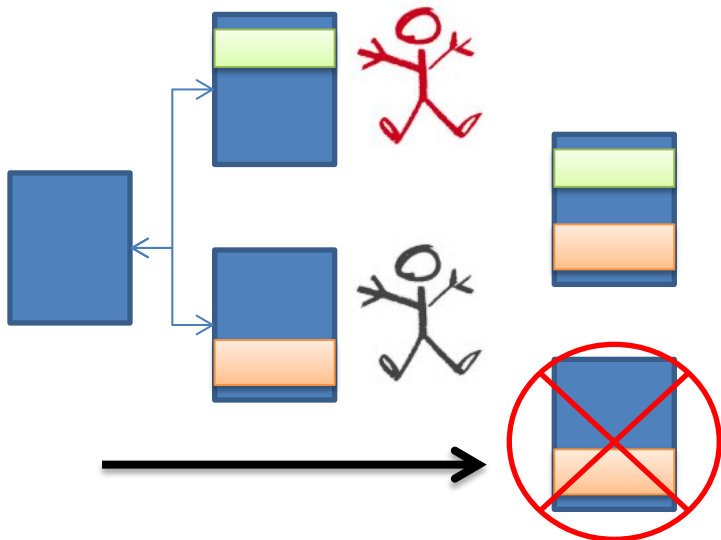
Concurrent access
Interface / interaction (HCI)
...

Social challenges

Coordination
Acceptation
...

Group awareness

Creating a common context



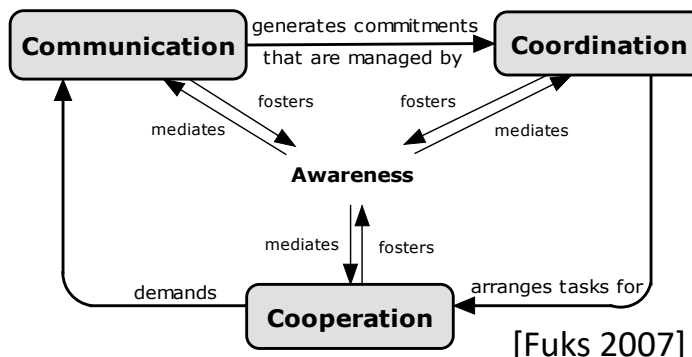
Group awareness



- Group awareness**

“understanding of the activities of others, which provides a context for our own activity on a group, allowing evaluating individual actions with respect to group goals and progress, and assuring that individual contributions are relevant to the group’s activity as a whole” [Dourish 92]

- Knowledge about the group and its activities (past, present and future activities)
- **Common context for group activities**

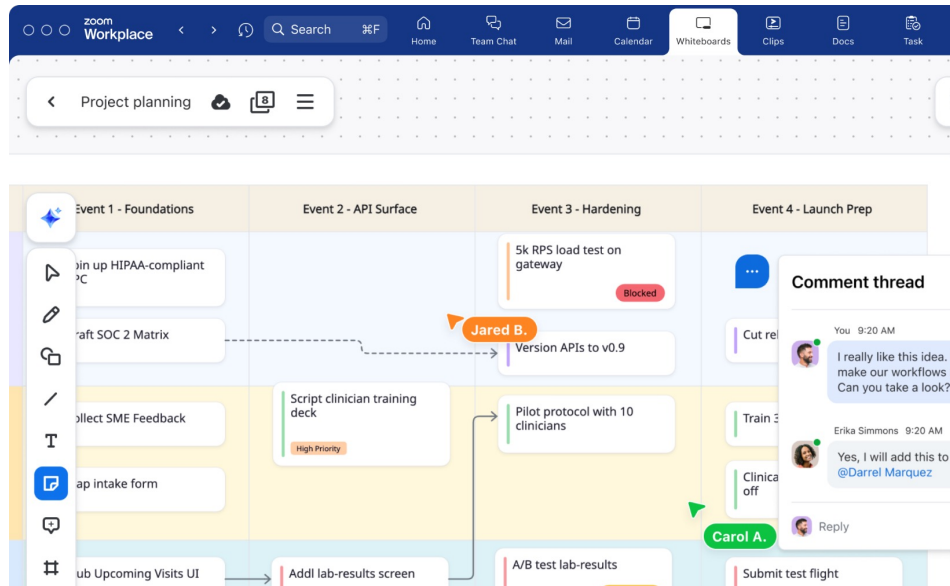


		Synchronous Environments	Asynchronous Environments
What {	activities	micro-level	macro-level
	roles	information according to roles	
When {	events	present future	past continuous future
	presentation	immediately	afterward (user's choice)
Where {	persistence / utility time	low	high (lifetime)
	space	workspace awareness	shared objects
How {	metaphor	desktop	system
	interface	WYSIWIS relaxed WYSIWIS multiview	relaxed WYSIWIS multiview uncoupled
Who {	balance	filtering grouping	
	presence	mandatory	optional
Who {	communication tools	essentially synchronous	essentially asynchronous
			How Much

[Kirsch 2003]

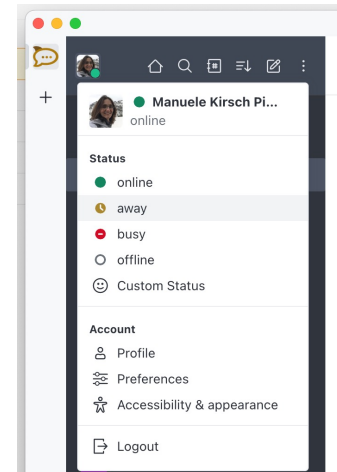
Group awareness

- Concrete elements



[Zoom]

Telepointers

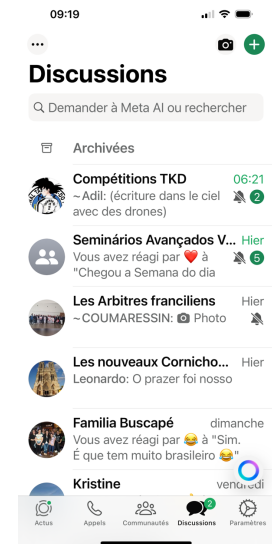


Availability
indicator

Blurred
background



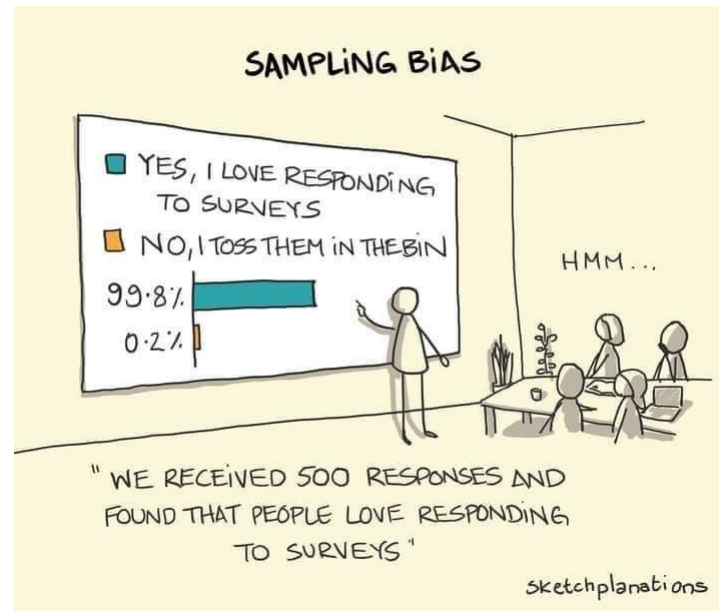
Messages
indicator



COVID crisis & Home office practices

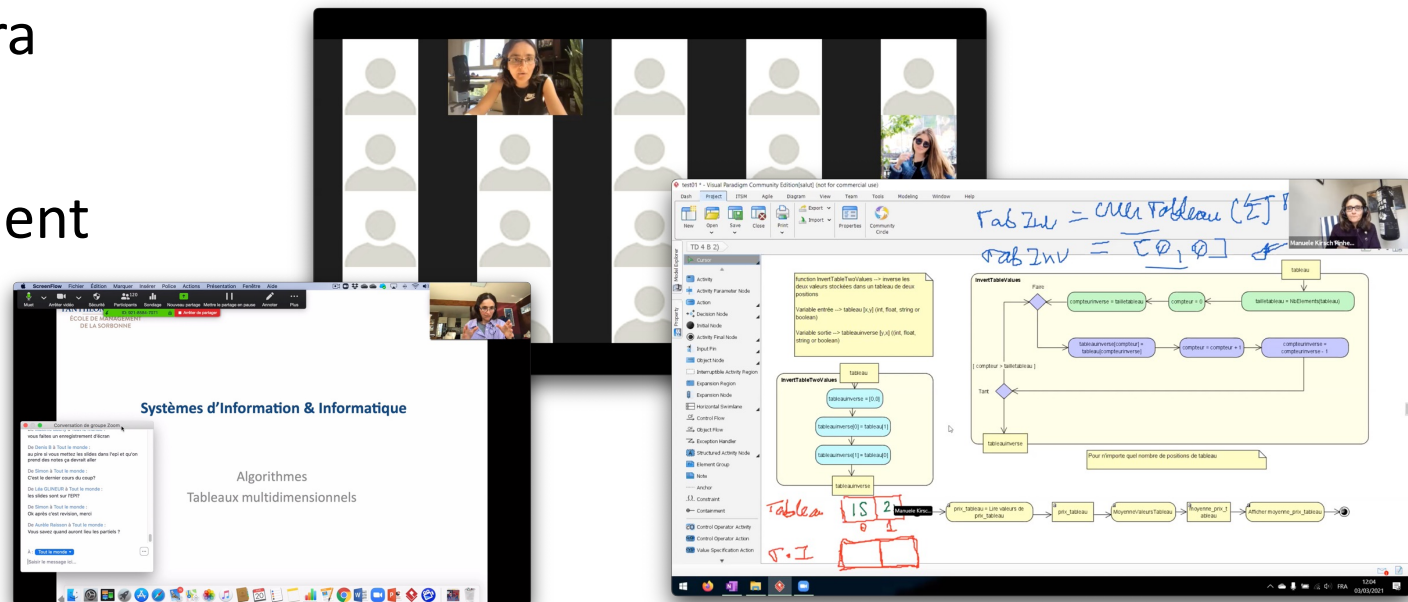
- Home office practices *before* COVID crisis
 - ↓ transport
 - ↑ flexibility
 - private x professional life balance
 - ↑ productivity

! Sampling bias



COVID crisis & Home office practices

- **COVID crisis**
 - Game changer
 - Critical mass
- Personal experience
 - No camera
 - Privacy
 - Environment

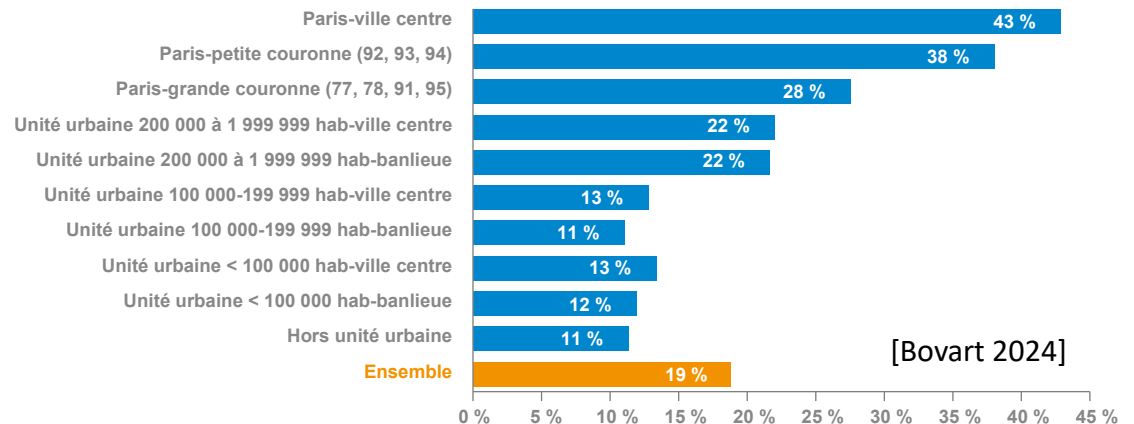


COVID crisis & Home office practices

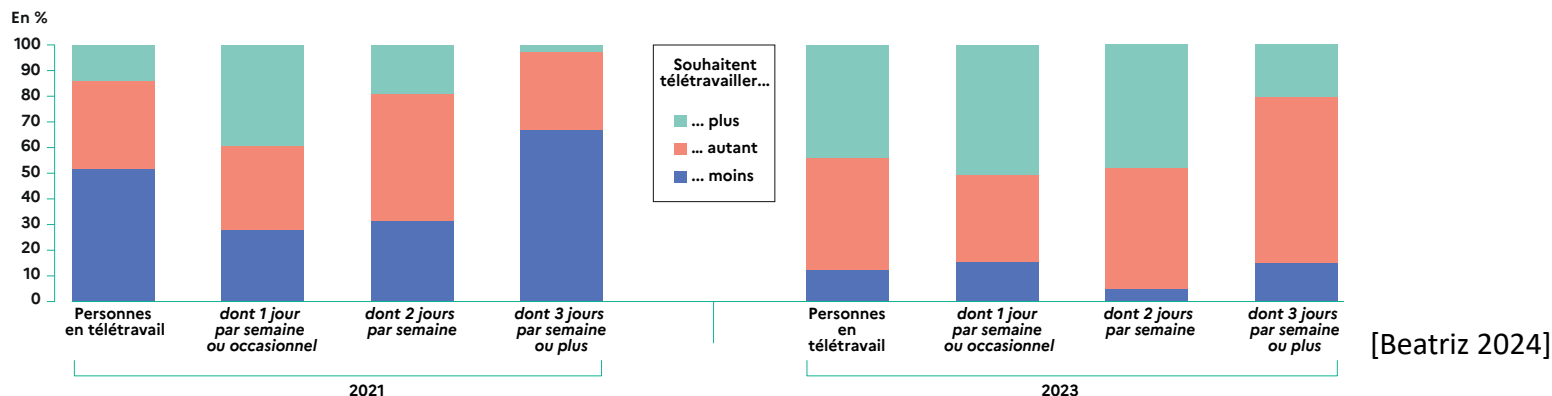
- Home office *after* COVID crisis

- Largely adopted
- Autonomy
- Comfort

Part de télétravailleurs parmi les salariés résidents, selon la taille des unités urbaines de résidence



GRAPHIQUE 4 | Souhaits exprimés par les télétravailleurs sur l'intensité du recours au télétravail, selon leur pratique du télétravail en 2021 et 2023

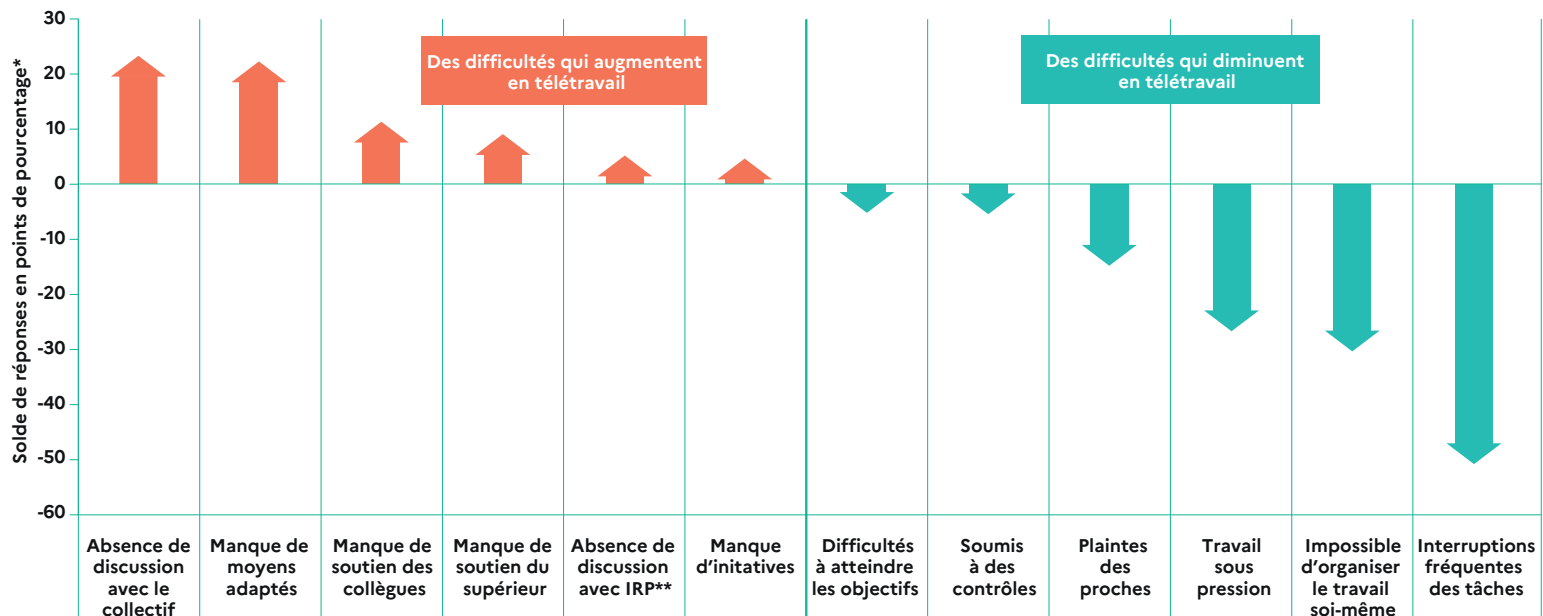


COVID crisis & Home office practices

- Home office *after* COVID crisis
 - Largely adopted
 - Autonomy
 - Comfort

GRAPHIQUE 1 | Différences de conditions de travail des télétravailleurs entre activité à distance et présence sur site, en 2023

[Beatriz 2024]



COVID crisis & Home office practices

- Home office *after* COVID crisis

Culture RH ACTUALITÉS RH > RESSOURCES > LA QUESTION RH LOGICIELS RH PODCAST RH >



“En 2024, 53% des salariés déclarent souffrir de niveaux de stress élevés, une augmentation de 13 points par rapport à 2023.”



(étude Ignition Program)

De plus, 62% des répondants signalent un **épuisement physique**, en hausse de 11 points.
 La distance émotionnelle, qui traduit des difficultés relationnelles et **une perte de confiance**, touche 51% des salariés, soit une augmentation de 11 points.

[Lajoinie 2024]

Talent Program > Articles > Fin du télétravail

Fin du télétravail : vers un retour généralisé au bureau ?

Est-ce la fin du télétravail en France ?

4 novembre 2024 ★★★★★ Rédigé par **Sabrina Bonneton**

Amazon l'a annoncé le 16 septembre dernier, « le télétravail, c'est fini ». Près de 300 000 salariés doivent d'ici 2025 effectuer un retour au bureau en 100% présentiel. La principale raison ? Une **baisse de productivité de près de 20%** constatée depuis ces dernières années. Constat renforcé par d'autres études faites par le MIT et Stanford.

[Figaro 2025]

«La grève a été inédite par son ampleur»: la colère des salariés de la Société générale contre la réduction du télétravail

Par **Danièle Guinot**

Le 27 juin 2025 à 18h48

[Banques](#) [Société Générale](#) [télétravail](#)

 Copier le lien
 
 
 
 



[Bonneton 2024]

Home office practices

Individual vs Teams

↑ Autonomy

↑ Work life coordination

↓ Transport

↑ Comfort

↓ Contact among team members

↓ Creativity

↓ Commitment

↑ Isolation

↑ Invisible work

- French law

- Disconnection rights

→ without controlling?

- Appropriate working conditions

→ private space (home)?



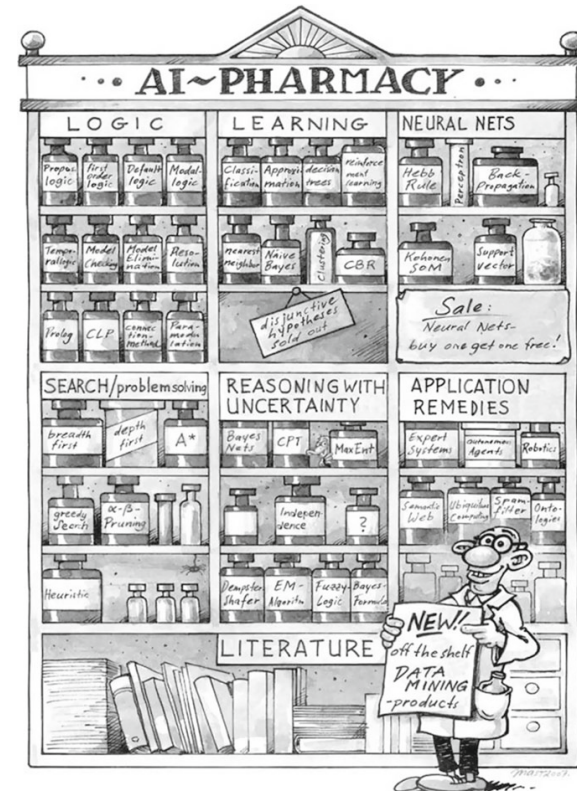
Home office practices & Group awareness

- Home office practices → team support is needed !
- **Missing group awareness support**
 - Current support only for synchronous work
 - Almost no support for asynchronous work
- Multiple platforms
 - Teams, Zoom, Webex, Meet...
 - Sharepoint...
 - ServiceNow, Jira...
- ***How to keep trace of team activity?***



Group awareness & AI

- What about Artificial Intelligence?
 - “AI is the ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity. AI enables technical systems to perceive their environment, deal with what they perceive, solve problems and act to achieve a specific goal.” [EU 2020]
- Many potential uses
 - **Image processing**: blurring, focusing...
 - **Process mining (BPM)**: traces analysis, revealing informal/implicit process, machine learning technique
 - **Knowledge management**: querying knowledge bases, LLM & RAG techniques



Group awareness & AI

- Possible applications
 - Identifying group awareness information on team traces
 - Querying group awareness information
 - Identifying potential distress situations
- Challenges
 - *Personalization*
 - Relevance of group awareness information depends on personal context and organizational roles
 - *Privacy*
 - GDPR : General Data Protection Regulation
 - EU AI Act

Learning & AI Challenges

- Use of Groupware tools for learning
 - Better working together
 - Learning to work together
- Computer-Supported Collaborative Learning
CSCL
 - Technology support for learning activity
 - Team learning or learning in a team

Learning & AI Challenges

- Use of AI on teaching activities

Opportunities

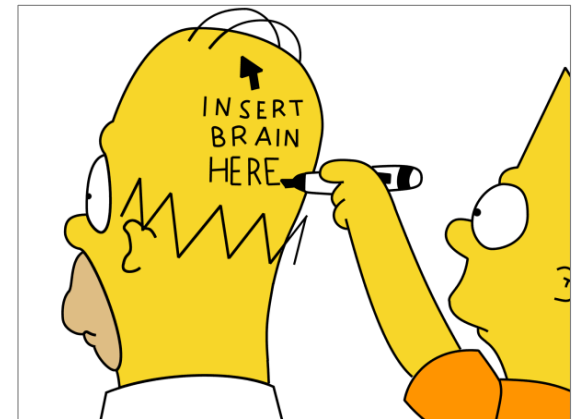
&

Threats

- Learning how to learn...
- Learning criticism...

Tableau 5. Taux de blocage en fonction du niveau

Robot	Taux de blocage (ccbot)	Taux de blocage (google-extended)	Taux de blocage (gptbot)
Revue prédatrice	0 %	0 %	0,18 %
Revue de niveau 0	1,89 %	1,77 %	3,39 %
Revue de niveau 1	5,36 %	5,33 %	7,04 %
Revue de niveau 2	15,08 %	17,88 %	27,37 %
Top 50	19,35 %	32,26 %	48,39 %



Big Data in 1990...

[Viseur 2025]

Learning & AI Challenges

- Use of AI on teaching activities

Opportunities

&

Threats

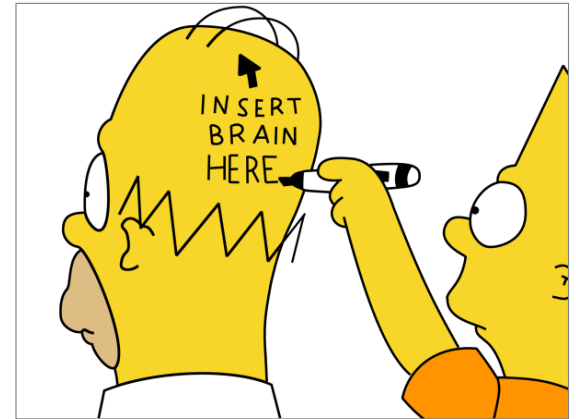
- Learning criticism...
- Identifying hallucinations

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cet article n'existe pas

Favaretto, M., De Clercq, E., & Elger, B. S. (2020). Big data and privacy: A systematic literature review. *Journal of Big Data*, 7(1), Article 25. <https://doi.org/10.1186/s40537-020-00287-6>



Concluding observations

- **Building a *group***

- A set of people is not a necessarily a group...
- A common goal doesn't make us a group...

Individual
intentions
aspirations



Team / Project
goals
tasks

Organization
strategic goals
and directions

Distance



- Physical distance
- Emotional distance

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