Utrecht University

Understanding Privacy Decisions of Homeworkers During Video Conferences

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Embarrassing moments can happen

Albert Heijn supermarket commercial during Covid times

Inviting your colleagues at home

During online meetings, it is common and expected to have a working camera and microphone.

This allows your colleagues or supervisors an inside look into your social, private life - including family members.

This might result in unknowingly and inadvertently sharing various personal details.
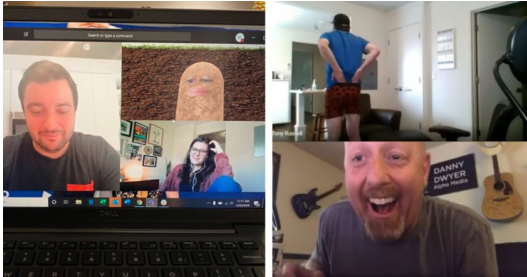
Videoconferencing software offer various levels of privacy or openness.

There is not one perfect setting that fits all contexts and all individual preferences.

- Different videoconferencing contexts require different levels of openness versus privacy protection in order to make participants feel comfortable.
- E.g. one-to-one conversations vs group meeting - and presence of a superior.

Depending on the context, workers may want to turn their cameras on or off, mute their microphones, mute their microphones or move to a separate room.

- Being too protective – or being too open – may lead to (socially) awkward situations.

Theory: contextual integrity

Developed by Helen Nissenbaum, published in 2010, as a different perspective on privacy norms.

In a particular context - e.g. a videoconference - only certain levels of personal details (*more generic: data flows*) are expected, appreciated or allowed.

- People play different *roles* (e.g. superior or employee)
- They perform different *activities* (e.g. grading or assessing)
- They adhere to particular *norms* that shape (power) dynamics

Theory: power distance

One of the concepts in Hofstede's cultural dimensions theory on how a society's values relate to behaviour and choices.

- The extent to which less powerful members of organizations and institutions accept unequal power distribution
- Social groups with a high power distance tend to have a very distant and formal internal culture

Power distance also influences employee participation, job descriptions, decision-making, management control, …

Privacy and netiquette
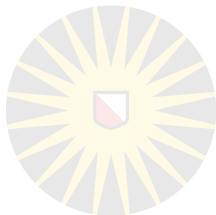
Organizations have explicit and implicit expectations:

- Banks may require employees to wear proper business attire during (online) meetings

For online communication, the term '*netiquette*' is a relatively new term that highlights the set of social codes present in online communities.

During work or school video conferences, participants are expected to adhere to both (regular) etiquette and online netiquette rules, which may be or may not be explicitly stated.

Our study

In this study, we aim to connect the concepts of contextual integrity, power distance and netiquette to actual (intended) settings for video conferences while working from home.

Hypothesis: *In video conferencing settings with a high perceived power distance, workers will take more privacy-preserving actions than in low power-distance settings.*

Five scenarios

The scenarios were developed with typical home workers and students in mind.

1. Meeting with a superior
2. Group meeting with co-workers or students, with or without superior
3. Class or meeting with unknown peers
4. Presenting with screen sharing to co-workers or fellow students
5. Presenting to strangers (e.g. new customers)

We asked: *Would you turn camera or microphone on, blur the background, tidy up or go to a separate room? When presenting, would you check your desktop and close any applications or browser tabs?*
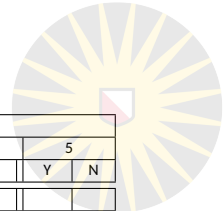
Participants and data collected

Participants were recruited via snowball sampling, mainly by directly inviting fellow students, friends, colleagues and relatives.

- No demographic data or other personal data were collected
- After concluding the survey and removing incomplete or not reliable answers, 37 complete sets of responses were left
- As expected and hoped for, most participants did provide quite extensive answers, which gave us a very rich corpus of textual data

Quantitative results

N=37	Scenario									
Video Conference Setting	1		2		3		4		5	
Answer	Y	N	Y	N	Y	N	Y	N	Y	N
Camera on	36	1	29	8	7	30				
Microphone on	21	16	17	19	5	32				
Background blur	13	24	16	21	10	26				
Separate room	13	24	14	23	9	27				
Intrusion prevention	25	12	25	12	23	14				
Pres: Screen preparation							27	10	34	3
Pres: Room preparation							27	10	34	3
Pres: Close apps/tabs							28	9	31	6

- Almost every respondent uses the camera in one-on-one meetings with a superior *(Scen. 1)*
- In meetings with peers *(Scen. 2)*, more respondents turned off camera or microphone, used screen blur and/or separate rooms
- The trend was even clearer in meetings with strangers *(Scen. 3)*
- Privacy measures when screen sharing was done more when presenting to strangers *(Scen. 5)* than to known peers *(Scen. 4)*

Power distance, group size and composition effects

In scenario 2, the presence of a superior did not have an effect on the choice of privacy settings.

- 21 out of 37 actually indicated to open up more towards their boss or teacher

30 participants applied measures to increase their privacy when the group size increased.

More privacy protection measures were taken when unknown people were present.

- However, only 7 out of 37 participants (19%) explicitly indicated that they adjusted their privacy settings
- This signifies that users automatically adjust their settings to a more protective configuration

Discussion and interpretation

Vertical power distance to superiors usually did not lead to more formal, privacy-preserving settings

- Probably, lower power distance environments empoyer employees to speak up for themselves, which creates cohesion.

By contrast, group size and (un)familiarity with group members did have an impact on perceived (horizontal power) distance and consequently stricter privacy settings.

Conclusions and implications

We observed that users indeed chose different settings for different types of meetings.

- It is important that users are aware of mutual preferences and expectations, in order to choose suitable settings for different meeting contexts
- It would make sense if video conferencing systems would offer different default settings, depending on group size and group composition

Knowing in advance the type of meeting and the associated settings would also help in shaping participants' expectations when entering a meeting, preventing technical or social faux pas.

Questions?
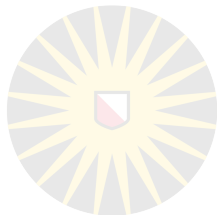
Privacy Engineering, User Modeling, Personalization,
Recommendation, Web Usage Mining,
Data Analysis and Visualization,
Usability, Evaluation