



Finding My Voice over Zoom

An Autoethnography of Videoconferencing Experience
for a Person Who Stutters

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About me



I am a person who stutters (PWS). I stutter covertly most of the time.

I have been working remotely since 2020 and rely on videoconferencing (VC) for professional and personal communications.

Previous work: interview study with 13 PWS and VC experiences (CHI '23)

“The World is Designed for Fluent People”: Benefits and Challenges of Videoconferencing Technologies for People Who Stutter

Shaomei Wu
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ABSTRACT

This work studies the experiences of people who stutter (PWS) with videoconferencing (VC) and VC technologies. Our interview study with 13 adults who stutter uncovers extra challenges introduced by current VC platforms to people who stutter. While some of the challenges are a direct result of the characteristics of stuttering (e.g. people/systems mistaking pauses as end of turn), a bigger yet less visible challenge comes with the significant amount of emotional and cognitive effort required to manage one’s speech and identity over VC, in which people’s existing communication strategies - such as body language and eye contact - are under-supported and their biggest discomfort - such as seeing oneself stutter - are exacerbated by preset features like self view. Overall, our work sheds light on the structural barriers and the opportunities for PWS to engage and enjoy virtual communications via VC technologies.

CCS CONCEPTS

• Human-centered computing → Empirical studies in accessibility; Computer supported cooperative work

its emotional and cognitive impact on people who stutter [7, 77]. Stuttering comes with substantial social penalties, including negative listener reactions, bullying and teasing, social harm and rejection, and stereotypes of being less intelligent, less capable, less attractive, less socially competent, and more anxious than fluent speakers [8, 15, 20, 23, 25, 28, 77, 85]. As a result, people who stutter (PWS) often develop strong emotional and cognitive reactions towards stuttering, including feelings of fear, guilt, shame, helplessness, social anxiety, self-stigma, as well as avoidance of certain sounds, words, situations, people, and relationships. Despite the success of a few notable people who stutter - such as President Biden, research shows that people who stutter are structurally disadvantaged and have an overall reduced quality of life: stuttering is associated with less satisfying personal relationships, higher risk of mental health problems, lower educational attainment, under-employment, and 20% - 35% reduced earnings compared to people who do not stutter [20, 34, 77].

Rooted in ableism and stigmatization, the marginalization of people who stutter is often exacerbated by and materialized through

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Opportunity for autoethnography

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- Uncovering emotional, cognitive challenges **under the surface**
- **Longitudinal** account capturing the **variability of stuttering**:
 - 15 months, 43 meetings
 - From 1:1s to public speakings

Experience questionnaire

Recorded after every VC session

Speaking situation

shaomei@gmail.com [Switch account](#)

Not shared

Reflection on spontaneity and efforts

I paid close attention to how I physically spoke

1 2 3 4 5

Completely agree ☐ ☐ ☐ ☐ ☐ Completely disagree

I was embarrassed by my speech

1 2 3 4 5

Completely agree ☐ ☐ ☐ ☐ ☐ Completely disagree

During the conversation, I was primarily listening to

My speaking partner

Other notes?

Your answer

Back Next Clear form

Examples of questions



Speaking partners: whom did I speak to?



Fluency: how fluent was my speech?



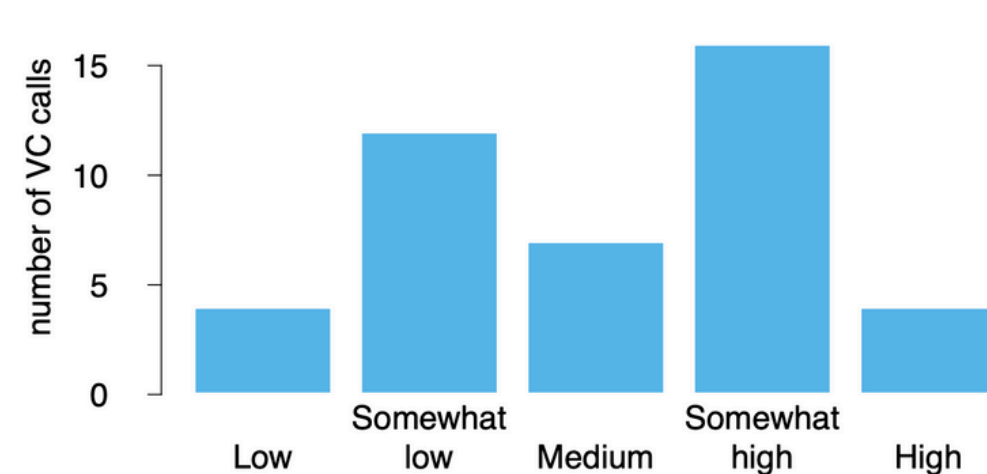
Spontaneity: how much effort and tension I experienced when speaking?



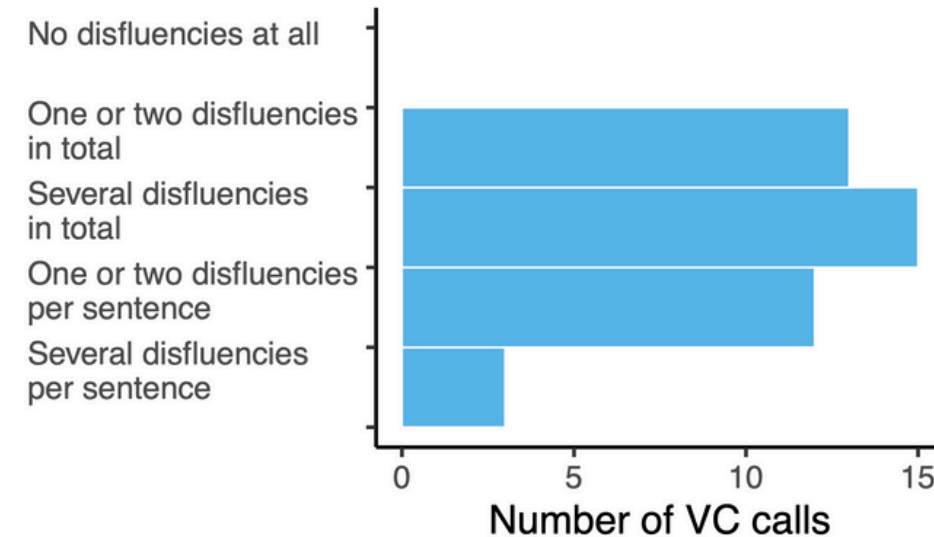
Sentiment: how did I feel afterwards?

Results Overview

VC is challenging, but I can still have a good experience



(a) “The amount of physical tension I felt while speaking was...”



(c) “How fluent was my speech overall?”



(f) Feelings words used to describe “Top feelings after the speaking situation”.

Effort

Speaking is physically draining

Fluency

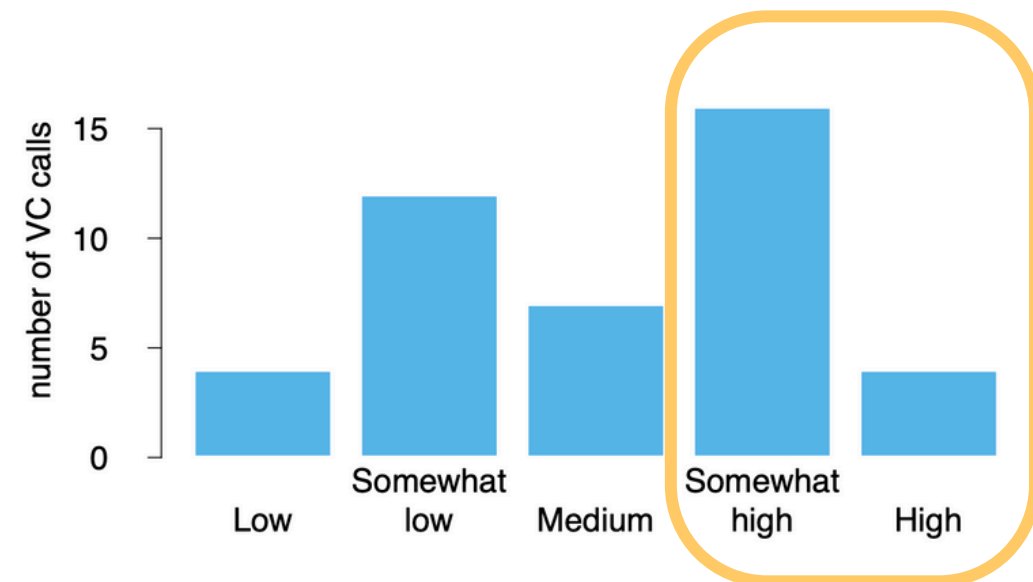
My fluency varied greatly

Emotion

Mixed but overall positive

Results Overview

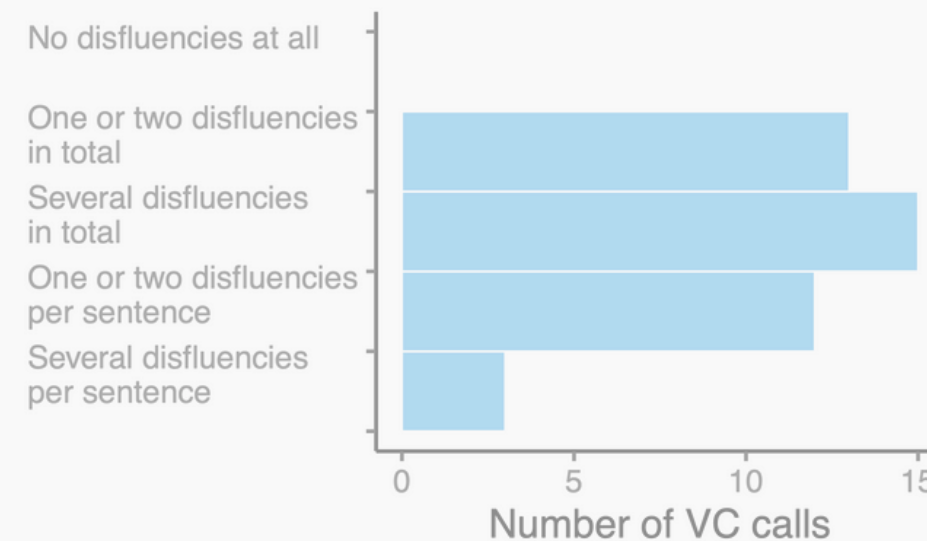
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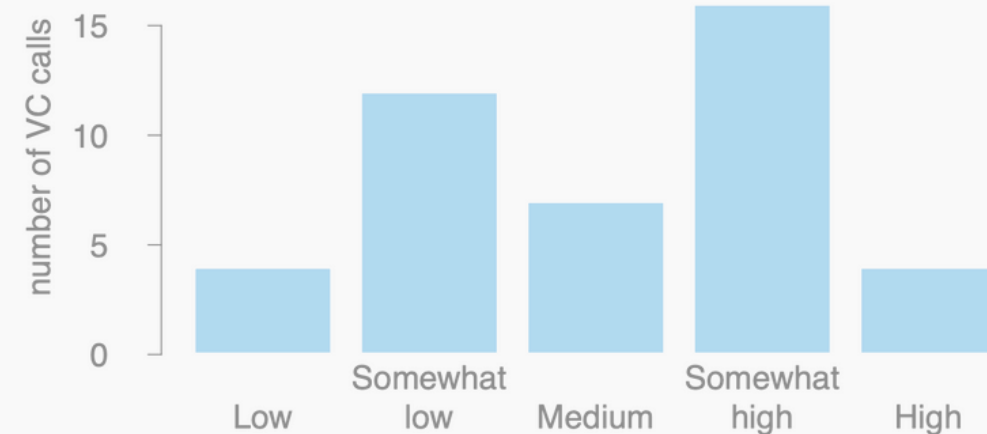
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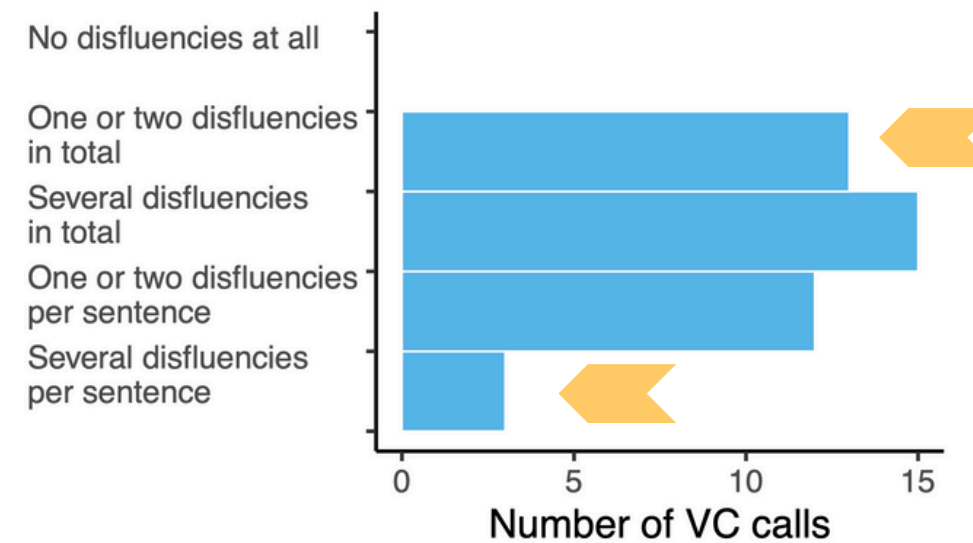
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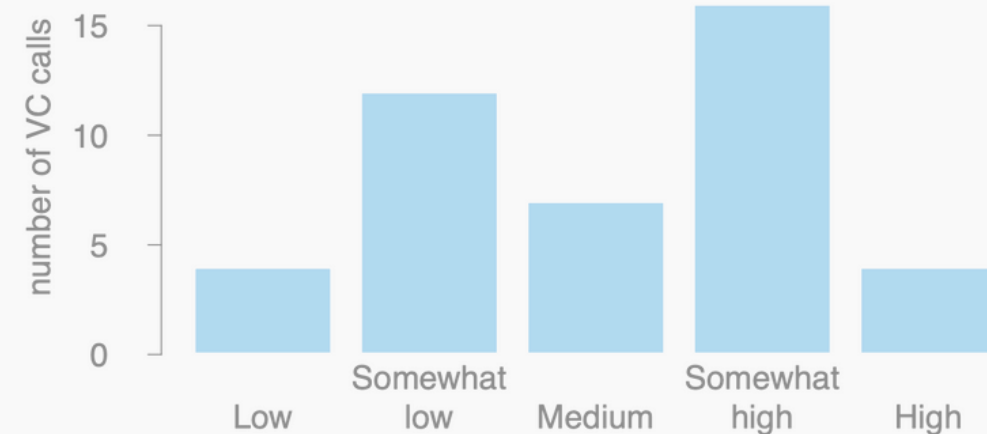
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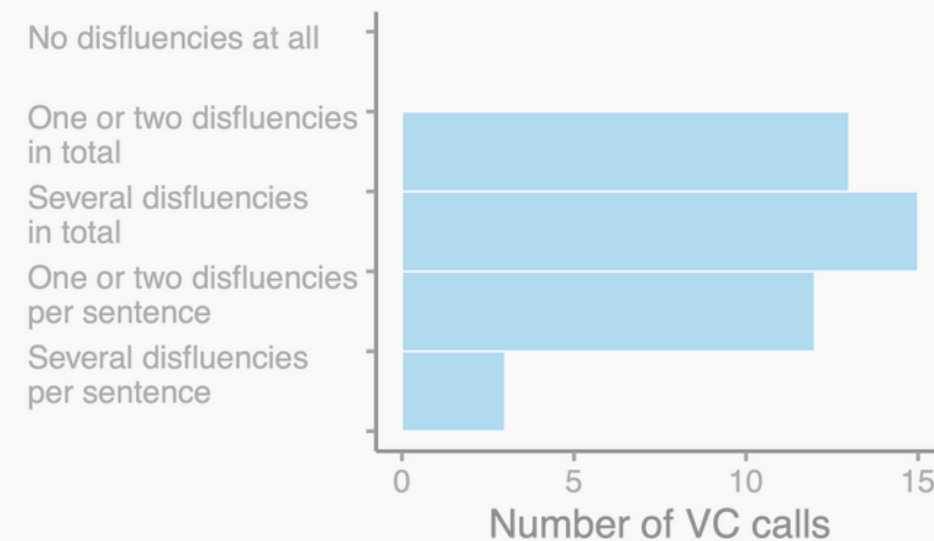
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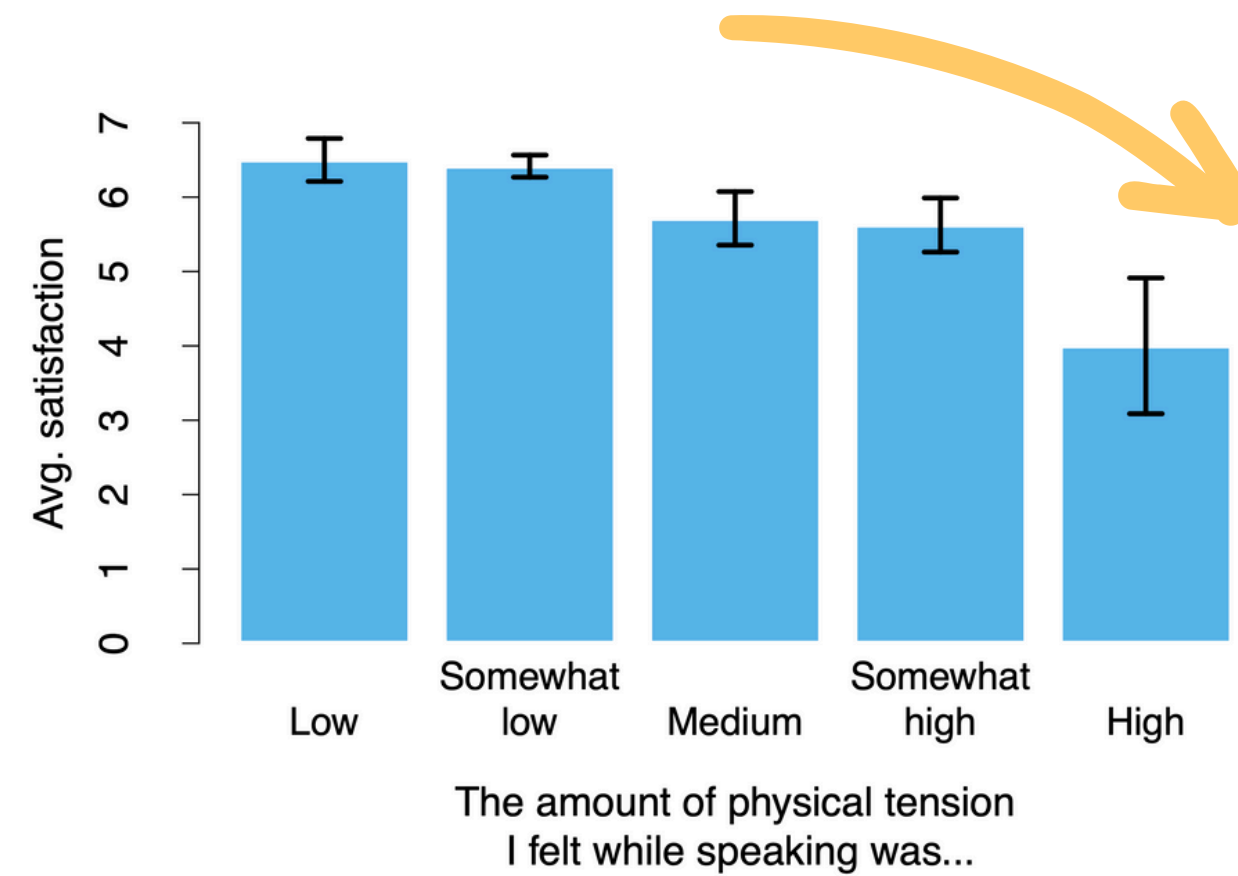
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Factors for Satisfying VC

Less tension, less disfluencies, more spontaneity, more engaged audience

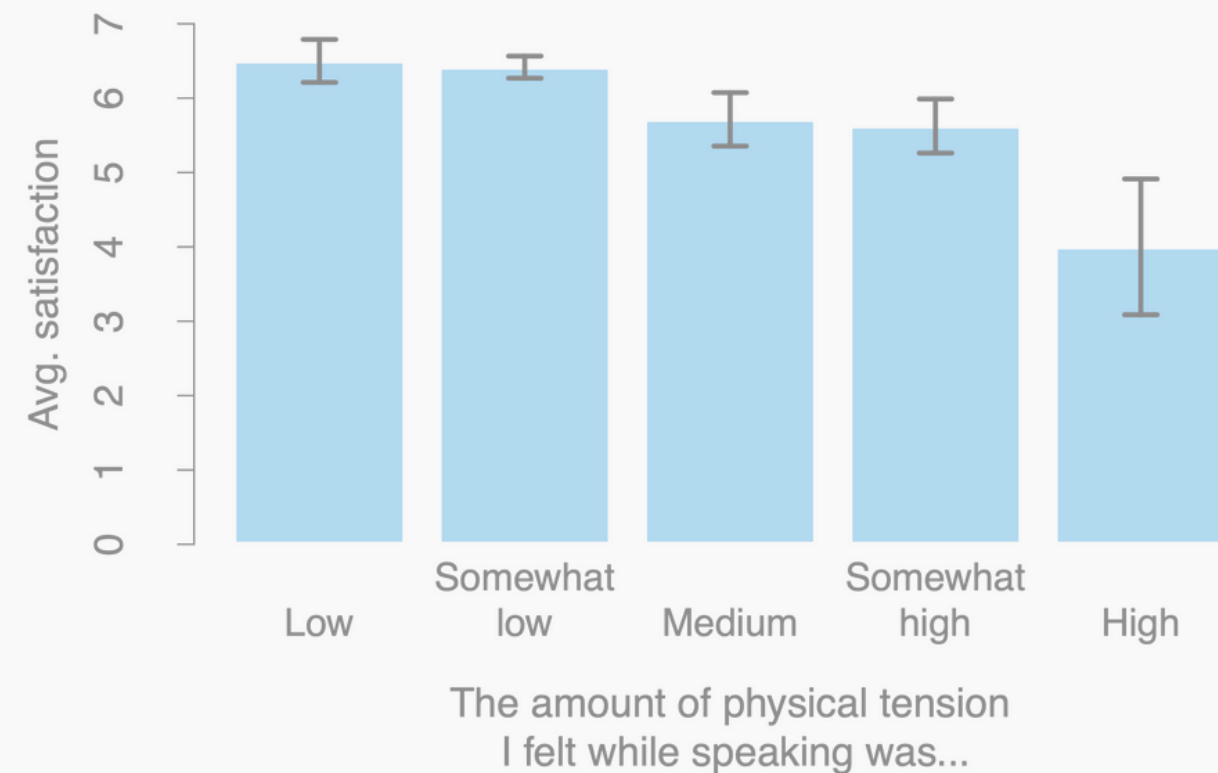


Physical tension

Less satisfied when I physically struggle with my speech ($p < 0.01$)

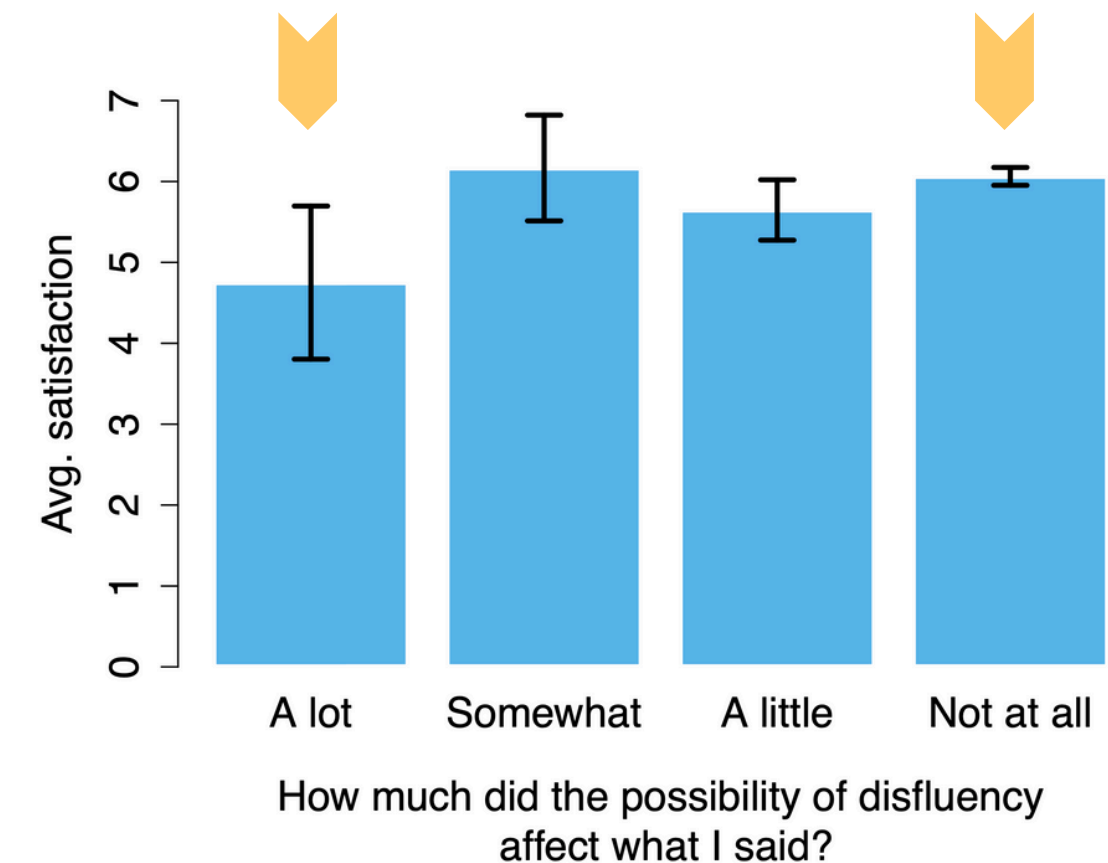
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Physical tension

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Spontaneity

More satisfied when I do not self censor because of stuttering ($p < 0.01$)

Vignette #1: Public speaking in a virtual panel



Despite high tension and low fluency, I can still enjoy the meeting when I **express myself authentically.**

“

I had lots of blocks but **did not change what I wanted to say.** I did feel embarrassed and had lots of physiological reactions before I started speaking, but I was glad that I did!

”

Vignette #3: One-on-one meeting



Microaggressions towards stuttering, even unintentional, can result in **self-censorship**, **emotional harm**, and **losing connection**.

“

My fluency was not great at the beginning, but it really suffered after she interrupted me [...] the bigger problem after that moment was that I did **not want to speak any more**.

I felt unheard and inadequate again. [...] This meeting left me with both a big disappointment and emotional trauma.

”

Discussion: What does stuttering teach us about virtual communications?





Support Emotional Experience

Instead of focusing on the words spoken, VC can help us pick up the **meaning of the silence between words**, and guide us through those moments of hesitancy and isolation, with compassion and solidarity.

Design for vulnerability

How can VC help us be vulnerable yet safe?

Vulnerability is both common and powerful, presenting opportunities for **authentic, intimate connections** - something particularly hard to establish given the physical distance between meeting participants.

Name Tag

Full Name


Preferred Name



Pronouns

She/Her/Hers

▼

Self Disclosure

Ask Every Time 

Send Disclosure Message  

Hi everyone, I am Katie Lawrence. Just want to let you know that I am a person who stutters. There will be disfluencies or pauses in my speech, and I will need some time to get the word out. I will use a sticker on my window to signal that I am not finished.

Save

Summary

- 1 The socio-technical **limitations** and additional **mental costs** of VC for PWS

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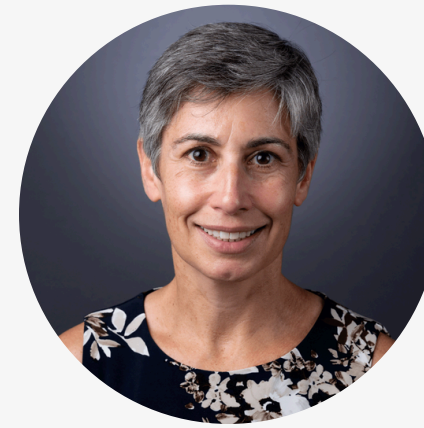
- 3 Autoethnography for marginalized communities:
 - allows us a longitudinal, in-depth view of the otherwise hidden struggles
 - asserts epistemic agency over marginalized experiences with technologies

Thank you!



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Download the paper

bit.ly/stutter-autoethnography

Work with us!

AImpower.org is an **independent**,
501(c)(3) nonprofit organization
dedicated to research and co-design
affirmative technologies *with* and
by marginalized communities.

Contact me about collaboration and
volunteering opportunities

shaomei@aimpower.org

INCLUSIVE VIDEOCONFERENCING



- Finding My Voice over Zoom: An Autoethnography of Videoconferencing Experience for a Person Who Stutters. **Shaomei Wu, Jingjin Li**, and Gilly Leshed. *CHI 2024*.
- Re-envisioning Remote Meetings: Co-designing Inclusive and Empowering Videoconferencing with People Who Stutter. **Jingjin Li, Shaomei Wu**, and Gilly Leshed. *DIS 2024*

FAIR SPEECH AI



- Towards Fair and Inclusive Speech Recognition for Stuttering: Community-led Chinese Stuttered Speech Dataset Creation and Benchmarking. **Qisheng Li, Shaomei Wu**. *CHI LBW 2024*
- AS-70: A Mandarin stuttered speech dataset for automatic speech recognition and stuttering event detection. Rong Gong, Hongfei Xue, Lezhi Wang, Xin Xu, **Qisheng Li**, Lei Xie, Hui Bu, **Shaomei Wu**, Bin Jia, Jiaming Zhou, Yong Qin, Binbin Zhang, Jun Du. *InterSpeech 2024*.

GRASSROOTS AI MOVEMENT



- “I Want to Publicize My Stutter”: Community-led Collection and Curation of Chinese Stuttered Speech Data. **Qisheng Li, Shaomei Wu**. *CSCW 2024 (under review)*.