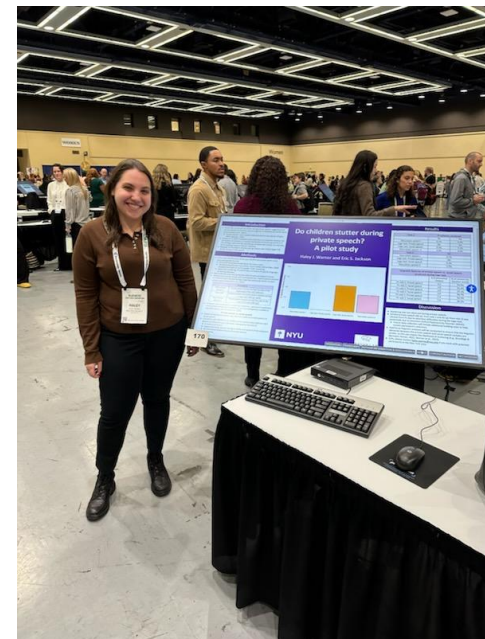
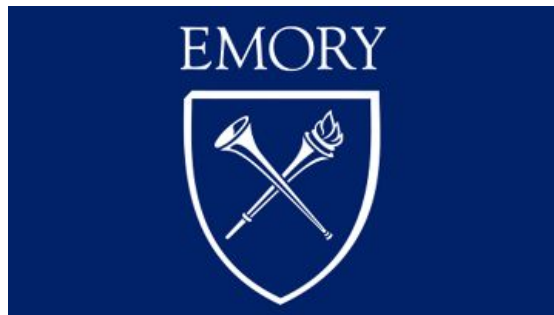


Stuttering Research

Courtney Luckman, M.A., CCC-SLP
Haley Warner, M.S., CCC-SLP

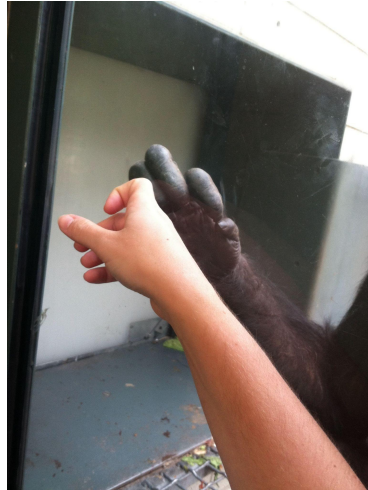
CCL Ignite 2025



About Haley



About Courtney



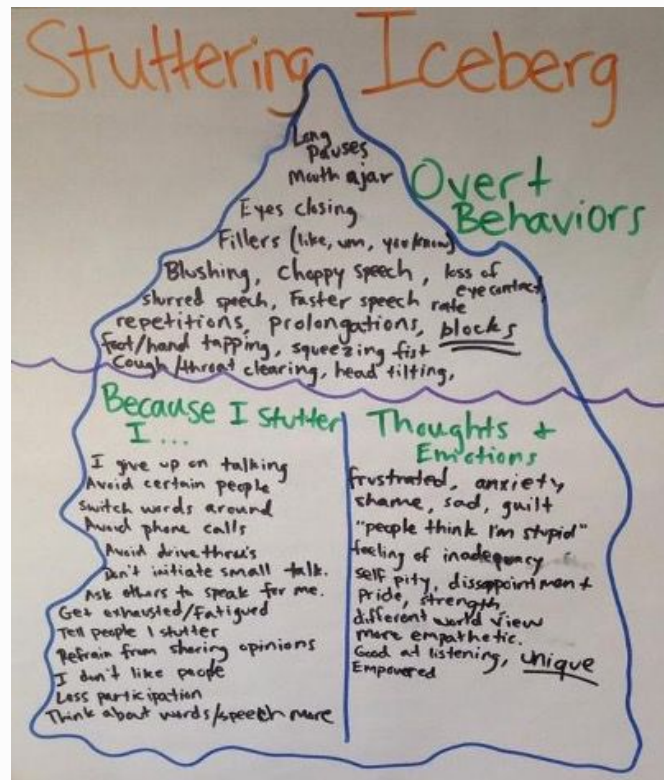
What is stuttering?

What is stuttering?

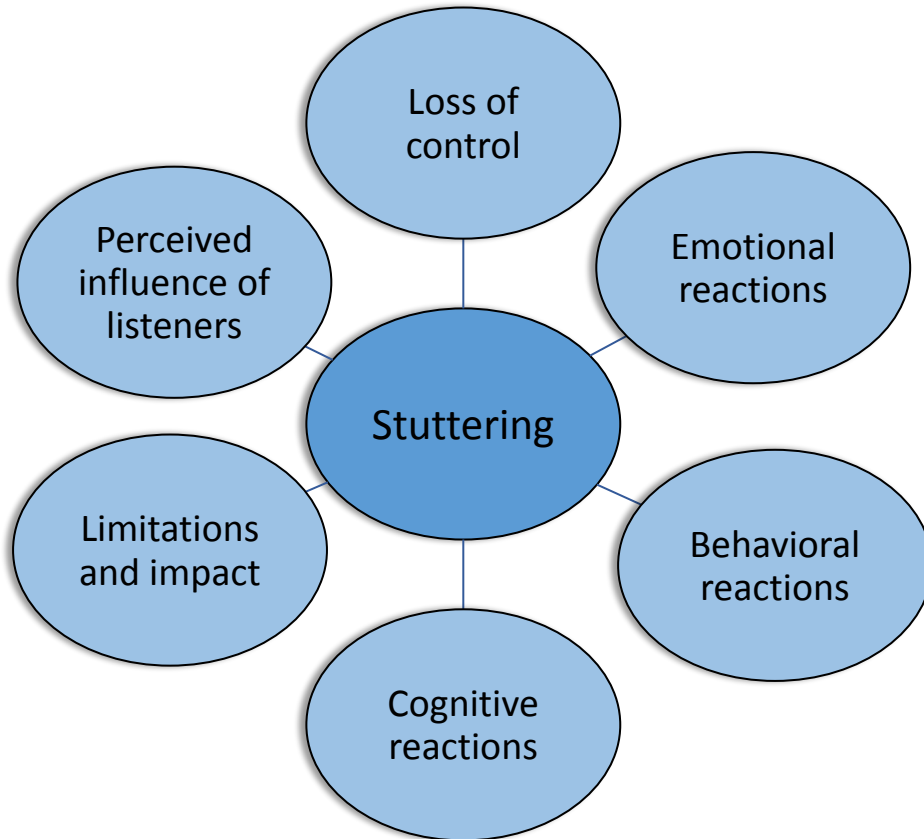
Blocks

Prolongations

Repetitions



What is stuttering to adults who stutter?

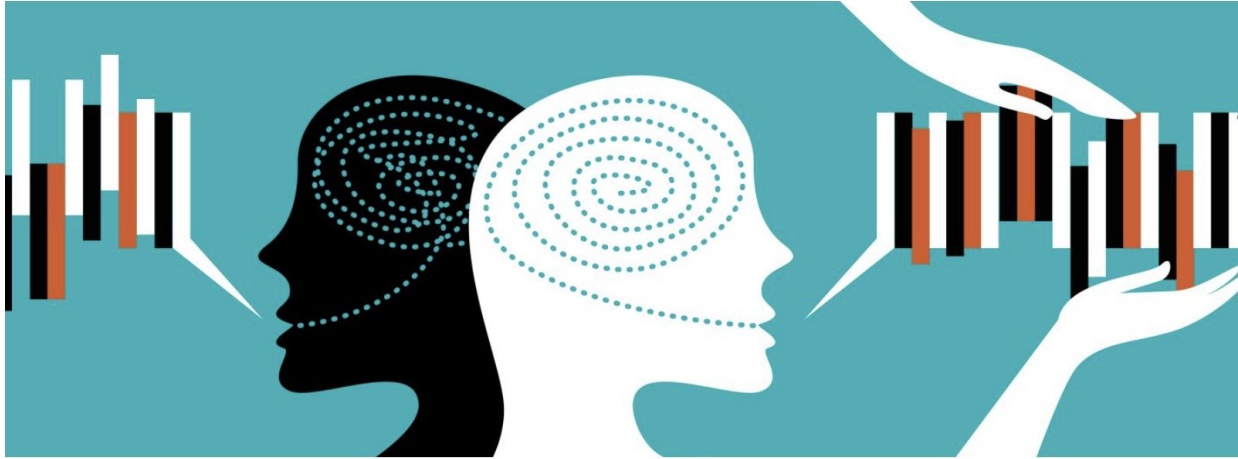


A “moment of stuttering” is not simply a singular stuttering-like disfluency. It is a point in time when they experience **all these components at once.**

True or false?

1. People stutter because they are nervous.
2. People who stutter are shy.
3. People who stutter are less intelligent.
4. Stuttering is caused by trauma.
5. Stuttering is caused by bad parenting.
6. People always stutter on the same words and in the same situations.

stuttering and variability lab

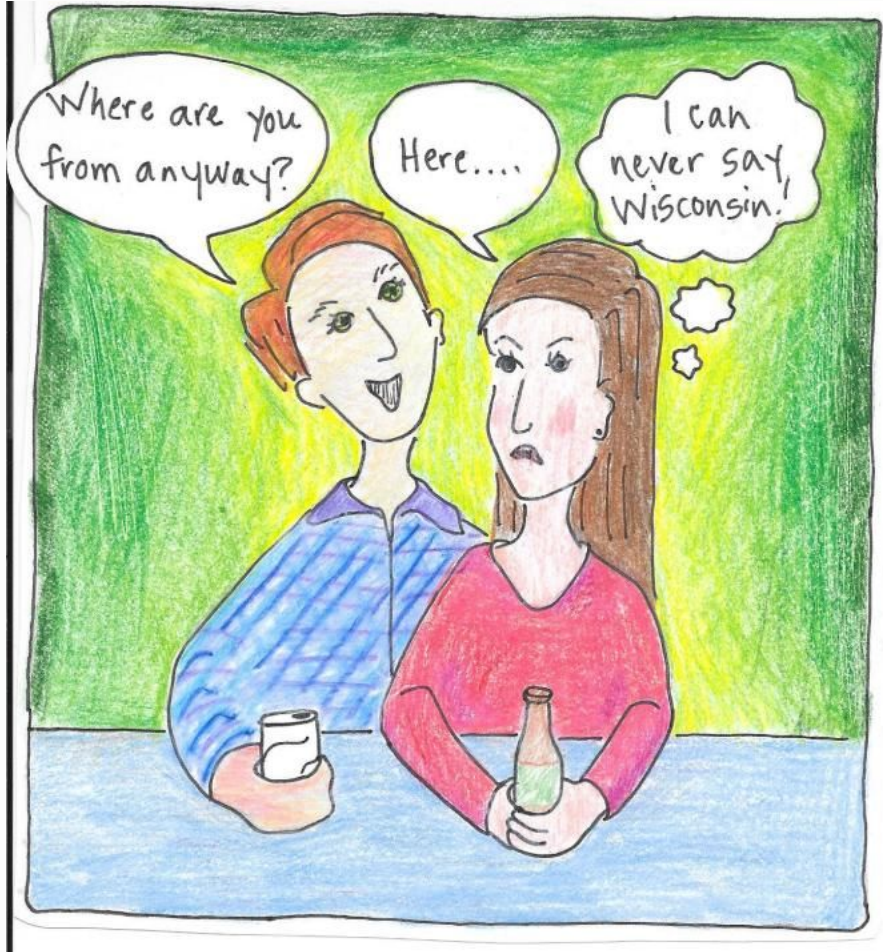
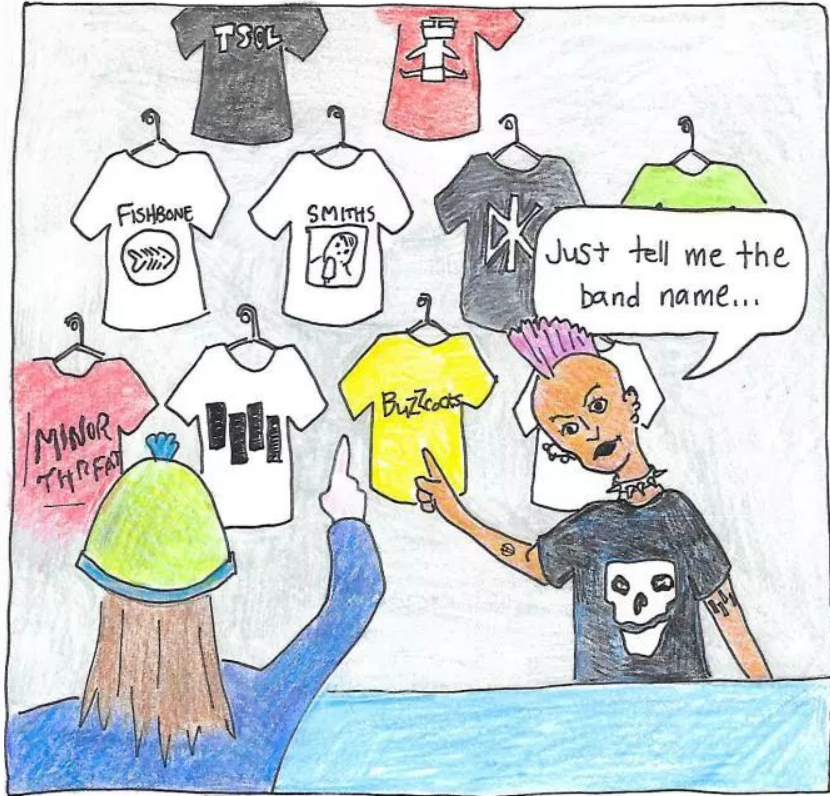


Variability is the spice of life, but also difficult to study. This is especially true of developmental stuttering for which variability is a hallmark characteristic — people stutter sometimes on certain words or sounds, but not other times on those same words or sounds. Our view is that these intermittent and involuntary “breaks” in speech are the primary driver of the experience of stuttering and what leads to significant adverse impact on quality of life. In the [savvy lab](#), we use a multi-levelled approach – neural through behavioral and environmental – to study the sources of variability including social interaction and anticipation. Ultimately, our goal is to use basic science approaches and knowledge of the human experience to inform support mechanisms and intervention approaches to improve the lives of children and adults who stutter.

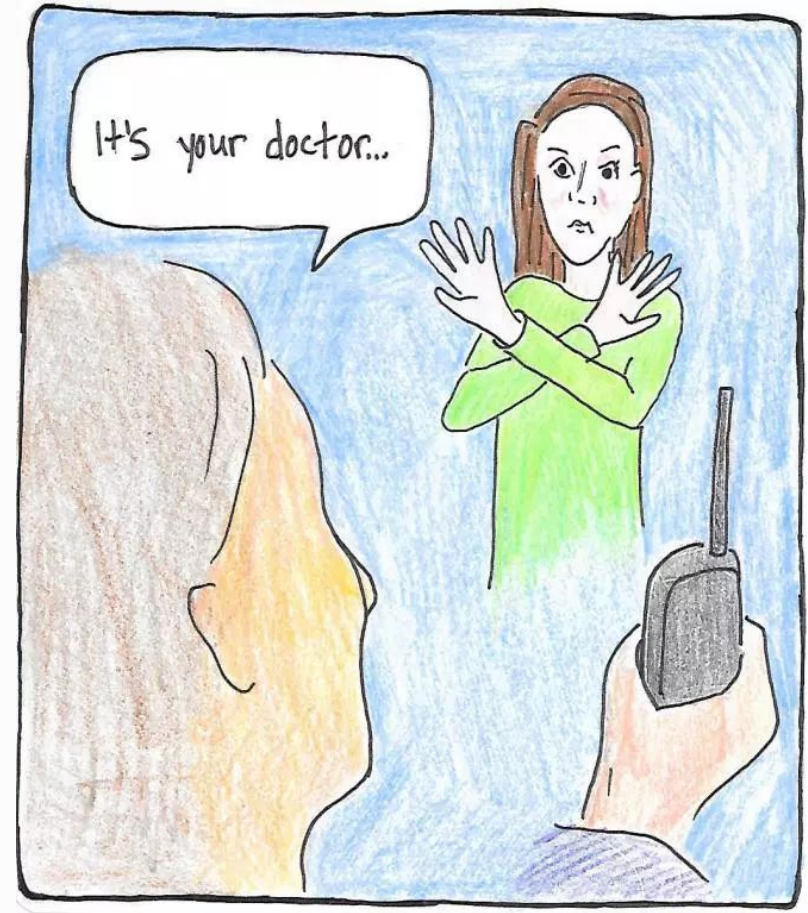
Life impact of stuttering

- People who stutter report a high rate of anticipating their stuttering moments which can lead to anxiety, uncertainty, and avoidance
- Many people who stutter feel the need to **hide the fact that they stutter** and report that in many areas of life, no one knows that they stutter
- This concealment leads to a **high amount of felt stigma** (shame, fear), even with low levels of enacted stigma (actual experiences)
- Stuttering is associated with **reduced earnings**
- **Listeners tend to exert greater mental effort** when listening to people who stutter than typically fluent speakers
- Listeners often display facial expressions that are interpreted to reflect **confusion, impatience, embarrassment, pity, shock** and also provide verbal reactions (e.g., finishing words and sentences, mocking)

Avoidance Behaviors



Avoidance Behaviors



Stuttering community/support

Stuttering support groups help both young people and adults by improving confidence, communication, and self-acceptance.

People who participate in stuttering self help groups are less likely to avoid speaking, more open about stuttering, and often experience better therapy outcomes and a stronger sense of community

(Herring et al., 2021; Gerlach et al., 2019; Trichon & Tetnowski, 2011)

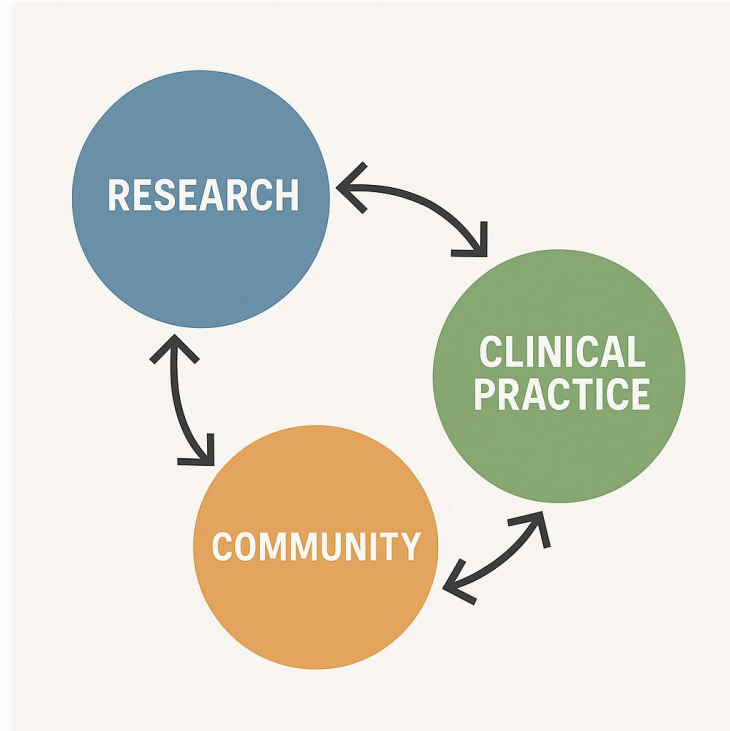


SPACE to listen
SPACE to connect
SPACE to express
SPACE to **stutter**

We are a nonprofit organization working to create more space for stuttering and change the way the world listens.



Our goal



Integrating the lived experience: Pseudostuttering activity

What is pseudostuttering?

Why is it important for SLPs and stuttering researchers to practice pseudostuttering?

Integrating the lived experience: Pseudostuttering activity

In pairs, take turns asking your partner questions such as:

What is your name?

What is your favorite color?

Where do you go to school?

What is your favorite ice cream flavor?

Etc.

Using proooooooooo longations, r-r-r-repetitions, andblocks

Haley's research

Stuttering variability

```
graph TD; A[Stuttering variability] --> B["Word-level: What words are more likely to trigger stuttering?"]; A --> C["Situational: What contexts are more likely to trigger stuttering?"];
```

Word-level: What words are more likely to trigger stuttering?

Situational: What contexts are more likely to trigger stuttering?

Project 1

- Transcribed 35 interviews with adults who stutter → dataset of 35,000+ words.
- Analyzed all words for MANY linguistic features (e.g., initial sound, word length) and fit statistical models to determine which features are most likely to trigger stuttering.

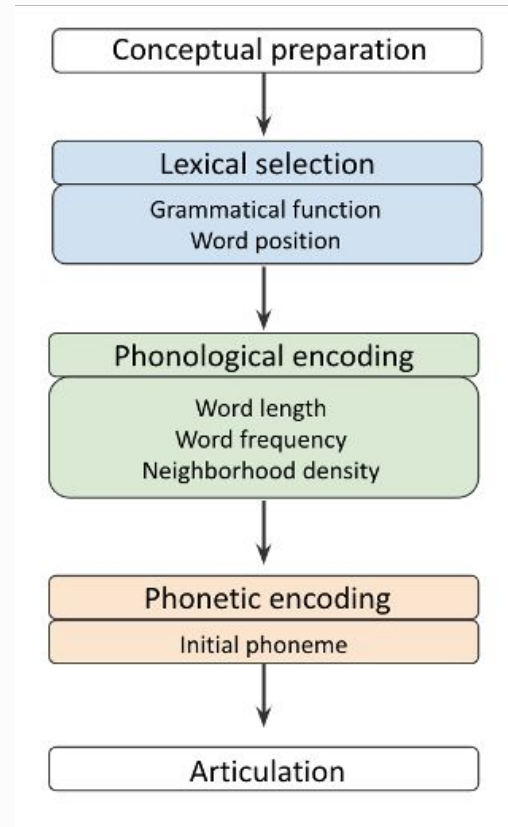
Project 1: Main finding

6 features increase the likelihood of stuttering (i.e., contribute to variability)

Initial sound: consonants vs. vowels	Part of speech: content vs. function words
Word position in a sentence: earlier vs. later	Word frequency: lower frequency vs. higher
Word length: longer vs. shorter	Neighborhood density: lower neighborhood density vs. higher

Project 1

- What does this mean for stuttering variability?
 - Do linguistic demands triggering stuttering?
 - Or do “communicative demands”?
↳ Project 2: information load

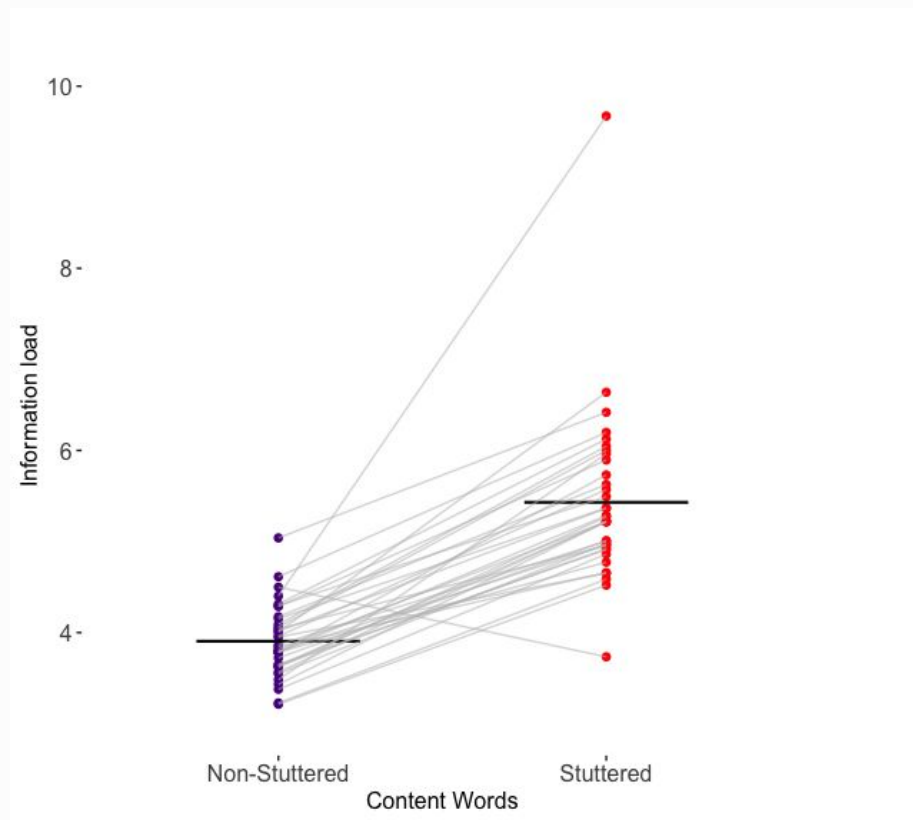


Project 2

- Information load = The amount of information a word carries based on the predictability of the word (Bloodstein et al., 2021; Brundage & Bernstein Ratner, 2022).
 - High information load: “Sam’s favorite dessert is _ _ _ .”
 - Low information load: “The recipe called for flour, sugar, and eggs to make a birthday _ _ _ .”
- Analyzed the same dataset from project 1.
- Measured information load using Surprisal from the GPT-2 model.

Project 2: Main finding

Words with higher information loads are more likely to be stuttered.



Project 3

- Adults do not stutter when they are alone.
 - A listener may be necessary for stuttering to occur.
- We tested this using private speech = speech without the perception of a listener (Vygotsky, 1934).
- However, no studies have whether the listener impacts children who stutter.
- **Research question:** do preschoolers stutter during private speech?

Project 3: Methods

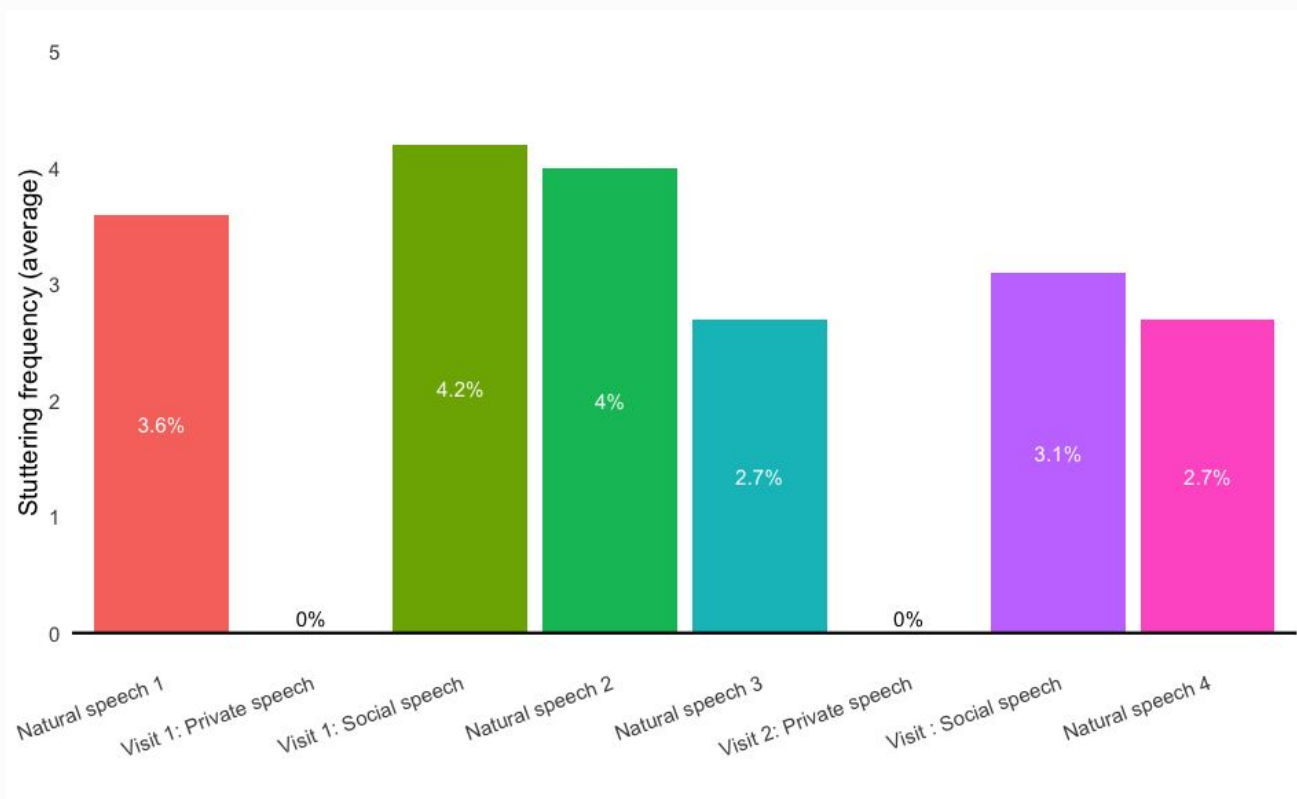
- Participants: preschoolers who stutter
- Data collection: in the home
 - Eliciting both private speech and social speech (typical speech) through play.



Project 3: Methods

- Categorizing speech as private vs. social (Winsler et al., 2005).
- Private speech = speech not directed at individual as indicated by the lack of:
 - A name or pronoun
 - Gaze at another person during or within one second of the utterance
 - An intentional physical touch of another person
 - Turn-taking
- Analyzing all speech samples for amount of stuttering (% syllables stuttered).

Project 3: Pilot results



Courtney's research





- Within an individual, stuttering frequency can change drastically depending on the situation

(Constantino et al., 2016; Jackson et al., 2016; Steer & Johnson, 1936; Tichenor & Yaruss, 2021)

- *Why* does stuttering change depending on the listener and social situation?

Social factors influence stuttering events

Listener presence

Speakers' perceptions of
being heard by a listener
(Jackson et al., 2021)

Listener identity

Talking to a listener
self-evaluated as “hard”
(Porter, 1939)

Impression

Wanting to make a favorable
impression
(Bloodstein, 1950)

Familiarity

Talking to an unfamiliar
person
(Diehl et al., 2019)

Authority

Talking to people of authority
(Brundage et al., 2006; Nang et al., 2018;
Sheehan et al., 1967)

Listener Reactions

Experiencing negative listener
reactions
(Brundage et al., 2006; Sheehan et al., 1967)

It remains unclear *how* people who stutter perceive social interactions and *why* specific situations may pose challenges for people who stutter



Study 1:

A qualitative investigation of how adults who stutter perceive social interactions

Study 2:

Manipulating social complexity in stuttering research: Using trained actors to simulate listener reactions

(in progress)

Study 1:

A qualitative investigation of
how adults who stutter
perceive social interactions

Purpose

To determine the social perceptions and meta-perceptions held by adults who stutter about their communication partners

Interviewed 15 adults who stutter

Results: Themes

Theme 1:
Perceived listener uncertainty

Theme 2:
**Discomfort with unfamiliar
listeners**

Theme 3:
**Feeling judged due to
stuttering**

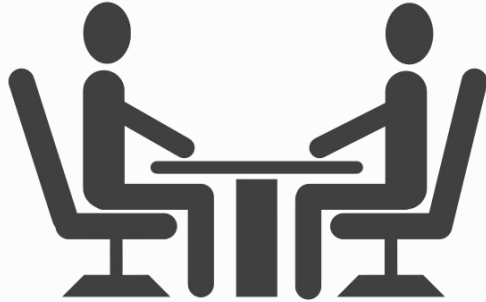
Theme 4:
**Time pressure to get message
across**

Theme 5:
Pressure to be fluent

Study 2:

Manipulating Social Complexity in
Stuttering Research: Using Trained
Actors to Simulate Listener
Reactions

(in progress)



Developing reliable methods to **manipulate social complexity** in controlled settings is essential for identifying the **factors that contribute to the variability** of stuttering events



Fig. 1. Screen shot from the challenging virtual job interview.

Prior studies used **virtual reality** to manipulate listeners

Brundage et al., 2006



No research has
explored **face-to-face**
listener behaviors

Purpose

To evaluate the feasibility of using trained actors to simulate social situations of varying complexity

Method



Participants: 15 adults who stutter (AWS)



Task: Engage in 5-minute conversations with trained actors



Conditions:

Easy listener

Moderate listener

Hard listener

	Description of character	Introduction	Number of times "the look" is given	Number of times actor disagrees	Number of times actor interrupts	Facial expressions	Posture	Rate of speech
Easy	You're friendly, warm, empathetic, open-minded, engaged, encouraging, and enthusiastic. You're excited to get to know this person. You connect with them on what they're saying. You make them feel valued, heard, and respected. Your presence feels warm, reassuring, safe, and affirming, like talking to an old friend who genuinely cares.	I'm X, nice to meet you (in friendly tone). Shake their hand	0	0	0	Nodding, empathetic	open, upright, and welcoming, face person directly, hands stay open	Slower. Patient. Give lots of time to respond - don't jump in right away.
Moderate	You are neutral, slightly distracted, slightly bored, slightly uninterested, indifferent, somewhat detached, and passive. You don't have strong opinions about the conversation and don't fully engage but aren't overtly rude or dismissive. You don't make the person feel entirely ignored, but you also don't make them feel particularly heard or valued.	I'm X, nice to meet you (in neutral tone). Do not shake their hand.	2-4	2-4	2-4	Neutral, minimal nodding	a little slouched, casual, disengaged, lean back slightly, shift positions occasionally (like you're getting restless), your body isn't fully turned toward the person	Normal/moderate - jump in shortly after person responds
Hard	You are impatient, frustrated, anxious, uncomfortable. dismissive, irritated, restless, and closed-off. You don't want to be in the conversation and feel like your time is being wasted. Your presence makes the person feel unwelcome, anxious, and uncomfortable.	Just walk into the room. Do not introduce yourself.	6-8	6-8	6-8	No nodding, cold, show mild annoyance, disinterest (expressionless)	defensive, slumped, leaning away, fidgety	Fast - respond quickly, sometimes talking over the other person before they finish, rush to fill pauses

Post-interaction questionnaires

Please reflect on this last conversation. To what extent do you agree with the following statements about your own experience and behavior during the interaction?

	Strongly disagree	Disagree	Moderately disagree	Slightly disagree	Undecided	Slightly agree	Moderately agree	Agree	Strongly agree
I paid close attention to how I physically spoke.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to clearly convey my thoughts and feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I struggled to get my words out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please reflect on this last conversation. To what extent do you agree with the following statements about your own experience and behavior during the interaction?

	Very effortful	Effortful	Moderately effortful	Slightly effortful	Undecided	Slightly easy	Moderately easy	Easy	Very easy
Talking was	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please reflect on this last conversation. To what extent do you agree with the following statements about your own experience and behavior during the interaction?

	Very high	High	Moderately high	Slightly high	Undecided	Slightly low	Moderately low	Low	Very low
The amount of physical tension I felt while speaking was	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Post-interaction questionnaires

Please reflect on this last conversation. To what extent do you agree with the following statements about your own experience and behavior during the interaction?

	Never	Almost never	Infrequently	Sometimes	Often	Almost always	Always
I switched words I thought I would stutter on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I talked around words I thought I would stutter on.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Post-interaction questionnaires

26. How uncool does__think you are?	1—2—3—4—5
27. How outgoing does__think you are?*	1—2—3—4—5
28. How negative does__think you are?	1—2—3—4—5
29. How boring does__think you are?	1—2—3—4—5
30. How anxious or nervous does__think you are?	1—2—3—4—5
31. How relaxed does__think you are? *	1—2—3—4—5
32. How funny does__think you are?*	1—2—3—4—5
33. How talkative does__think you are?*	1—2—3—4—5
34. How immature does__think you are?	1—2—3—4—5
35. How cool does__think you are?*	1—2—3—4—5
36. How positive does__think you are?*	1—2—3—4—5
37. How happy does__think you are?*	1—2—3—4—5
38. How polite does__think you are?*	1—2—3—4—5
39. How quiet does__think you are?	1—2—3—4—5
40. How annoying does__think you are?	1—2—3—4—5
41. How shy does__think you are?	1—2—3—4—5
42. How impolite does__think you are?	1—2—3—4—5
43. How mature does__think you are?*	1—2—3—4—5
44. How entertaining does__think you are?*	1—2—3—4—5
45. How serious does__think you are?	1—2—3—4—5
46. How helpful does__think you are?*	1—2—3—4—5
47. How confident does__think you are?*	1—2—3—4—5
48. How exciting does__think you are?*	1—2—3—4—5
49. How unhappy does__think you are?	1—2—3—4—5
50. How insecure does__think you are?	1—2—3—4—5
51. How well did your interaction with__go overall?	1—2—3—4—5
52. How much would you want to continue a friendship with__outside of the lab?	1—2—3—4—5

Post-experiment

How challenging was it to communicate with ___?

	Not challenging at all	Slightly challenging	Moderately challenging	Very challenging	Extremely challenging
Person 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Person 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Person 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Interview:

What situation was the most challenging and why?

How did you perceive this person?

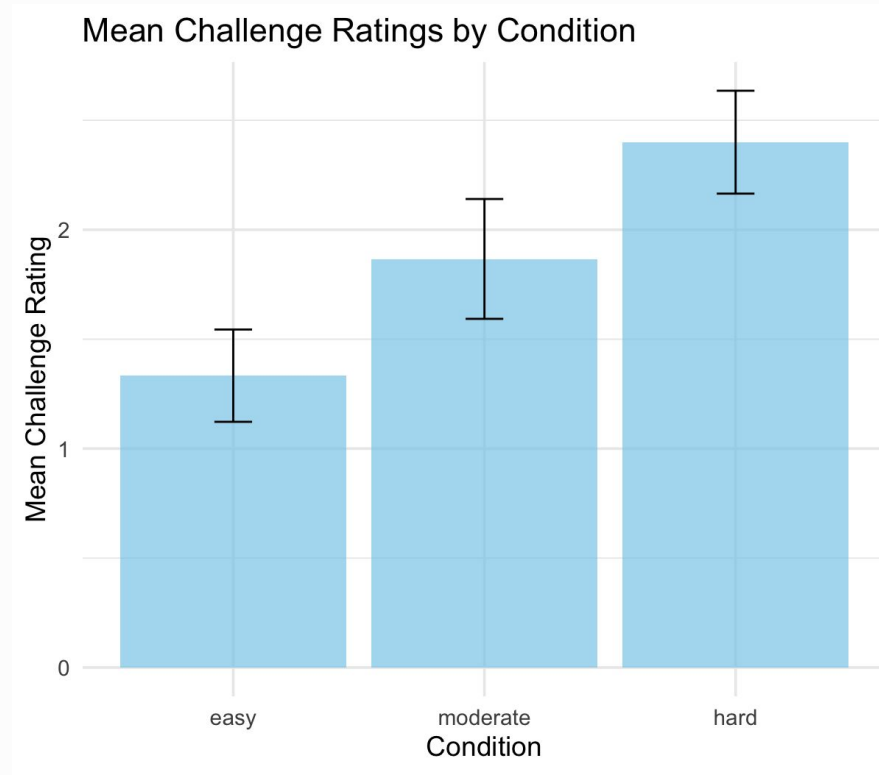
Did this impact your stuttering?

Hypotheses

1. Listener behaviors can be systematically standardized using trained actors
2. Clear distinctions will emerge between easy, moderate, and hard conditions
3. Stuttering severity and social perception ratings will support the method's validity

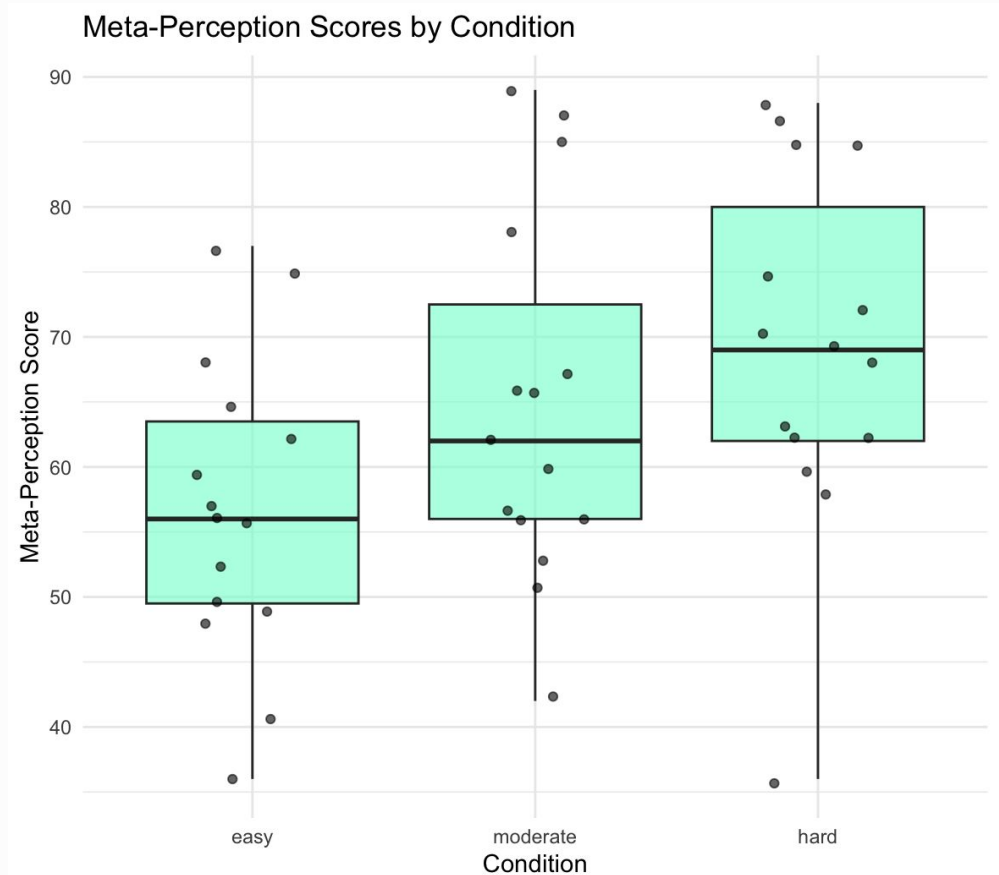
Which condition is perceived to be the hardest?

Preliminary results



In which condition do participants feel more negatively perceived?

Preliminary results



Thank you!

Questions?

Courtney Luckman cl6623@nyu.edu

Haley Warner haley.warner@nyu.edu

10 min - our stories - how we got here

10 min - what is stuttering/what the lab studies - where we are as a field/stuttering community/support and SLP work- shapes our research

15 min - pseudostuttering and debrief

15 min - haley research

15 min - courtney research

10 min - questions