# Clinical Aphasiology Conference 2022 Wrightsville Beach, NC

## Collaborative Commentary for Instructional and Research Applications

Brian MacWhinney, Davida Fromm, & John Kowalski
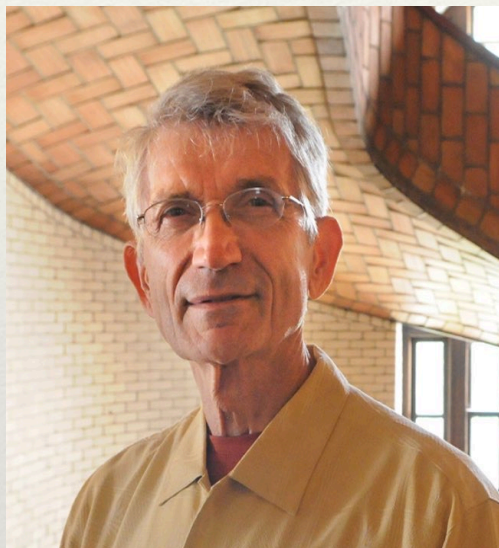
Carnegie Mellon University
Pittsburgh, PA

# Grant Support and Technical Development

❖ NSF BCS2117578, from the Human Networks and Data Science - Infrastructure (HNDS-I) program

❖ John Kowalski, CC computer programmer

# Also, these dynamic duos!



+



= AphasiaBank (2007)



+



= High quality, large quantity database

# Background and Rationale

❖ The goal of the new Collaborative Commentary (CC) system is to **open up this rich, large, shared database to commentary from the academic, clinical, and research communities**

# Background and Rationale

❖ Brian's original conception of CC: **the involvement of a research community in the interpretive annotation of electronic records**

❖ 1999 – meeting on classroom discourse

❖ They created a CD-ROM for a special journal issue with:

> ❖ articles commenting on lessons about graphs

> ❖ and PDF files that had links to replay the relevant video for each of the articles

# Background and Rationale

- Now this can all be **live**, **streaming**, and **interactive** through the TalkBank Browser where we have:

  - video data (!)

  - linked to transcripts (!)

  - that are publicly available (with password protection!)

  - and the technical infrastructure to support this dynamic new database

- The recent 3-year NSF grant allows us to refine CC to address a wide variety of interests for AphasiaBank and related TalkBank databases

# Methods -- Where? How? Huh?

❖ In the TalkBank Browsable Database: https://sla.talkbank.org/testTBB/

**collab button**

**TalkBank:** AphasiaBank ⌄      Collab

aphasia /

- Cantonese
- Croatian
- English
- French
- GR
- German
- Greek
- Hungarian
- Italian
- Japanese
- Mandarin
- Romanian
- Spanish

## TalkBank Browser

**Selecting a TalkBank Collection**

First, use the pulldown menu in the top left to choose the TalkBank collection.

**Selecting Transcripts**

Use the left menu to navigate through the TalkBank corpora. Click once on the folder you want to explore, and it will expand to show any available subfolders and transcripts. Once you have found the transcript you want to review, click its filename. Your browser will load the transcript in this space and any associated media below the navigation.

# Methods, cont.

A group **owner**:

1. creates a **group** – e.g., BNT-AphasiaBank

# Methods, cont.

A group **owner**:

1. creates a group – e.g., BNT-AphasiaBank

2. creates **tags** for scoring and error coding

## Group "BNT-AphasiaBank" Tags

- **0**: incorrect
- **1**: correct
- **cl**: Circumlocution
- **mw**: Multi-word paraphasic error
- **otu**: Other off-target utterances or comments
- **p**: Perseveration
- **perc**: Perceptual misnaming
- **ph**: Nonword phonemically based paraphasic error
- **ph/v**: Real word phonemically based paraphasic error
- **v**: Verbal paraphasia, semantically related to the target word
- **v/u**: Verbal paraphasia unrelated to the target word

**Tags for BNT scoring and coding**

# Methods, cont.

A group **owner**:

1. creates a group – e.g., BNT-AphasiaBank

2. creates tags for scoring and error coding

3. gives out the **group name** and files to score and code

## Group "BNT-AphasiaBank" Tags

- **0**: incorrect
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- **v/u**: Verbal paraphasia unrelated to the target word

Tags for BNT
scoring and coding

# Methods, cont.

A group **user**:

1. goes to CC -- https://sla.talkbank.org/testTBB/

2. requests to join a group

3. enters group owner's email address

4. picks from available groups
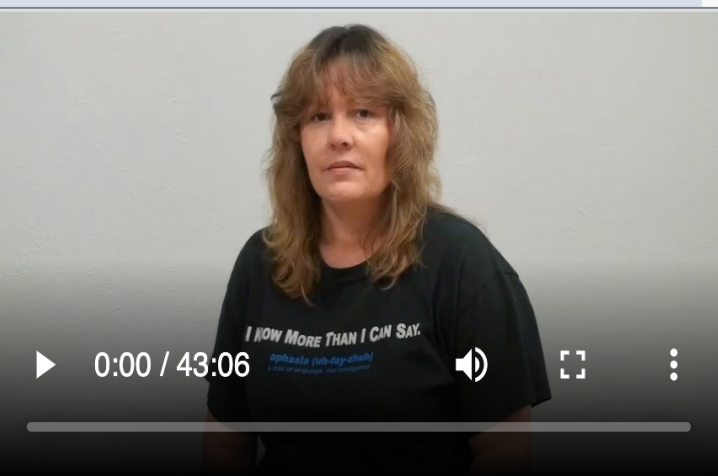
5. starts scoring and coding in the assigned files!

# A transcript with comments

**C** means a comment was inserted
for that utterance
in the BNT-AphasiaBank Group

**TalkBank:** AphasiaBank ⌄

aphasia / English / Aphasia / ACWT /

- **ACWT01a** ▶️ [+]
- **ACWT02a** ▶️ [+]
- ACWT03a ▶️ [+]
- ACWT04a ▶️ [+]
- ACWT05a ▶️ [+]
- ACWT07a ▶️ [+]
- ACWT08a ▶️ [+]

▶ 0:00 / 43:06 🔊 ⛶ ⋮

@G: BNT                                    🔍 ⬜ Collab Group: BNT-AphasiaBank

190 Ⓒ **PAR:** house . ▶
191 Ⓒ **PAR:** comb . ▶
192    **PAR:** &-uh &+s &+t &+f &+s (.) &+f &+ch &+ch &=head:no toothbrush . ▶
193 Ⓒ **PAR:** ɔs^pɹoʊkpʊs@u [: octopus] [* n:k] . ▶
194    **PAR:** (..) you wants [: want] [* m:+3s:a] me to xxx ? [+ exc] ▶
195    **INV:** if you will „ sure . ▶
196    **PAR:** +< okay . [+ exc] ▶
197    **PAR:** okay . [+ exc] ▶
198 Ⓒ **PAR:** &-uh bench . ▶
199 Ⓒ **PAR:** pɒlkleɪnɹoʊ@u [: volcano] [* n:k] . ▶
200 Ⓒ **PAR:** kʊlnju@u [: canoe] [* n:k-ret] [//] &-uh &+kuln &=head:no no [//] kʊlnu@u [: canoe] [* n:k] . ▶
201 Ⓒ **PAR:** beeper [: beaver] [* p:w] . ▶
202    **PAR:** &+fee &-uh &=groans &=head:no +... ▶
203    **INV:** that's right . ▶
204 Ⓒ **PAR:** beaver . ▶
205    **INV:** you're good . ▶
206 Ⓒ **PAR:** +< &-um kætʃtʊs@u [: cactus] [* p:n] . ▶
207 Ⓒ **PAR:** &-uh hæməp@u [: hammock] [* p:n] +... ▶

# Open comments – tags are in white



**323** Ⓒ **PAR:** ɑksopʊs@u [: octopus] [*] ? ▶

Utterance 323 to 323:
student 1: multiple attempts [ph] [1] 📝

**tags:**
1 point – correct production
phonemic paraphasia -- error code

**comment:**
multiple attempts



**359** Ⓒ **PAR:** stetho:^scope [/] stethoscope . ▶

Utterance 359 to 359:
student 1: correct with phonemic cue [0] 📝

**tags:**
0 points – incorrect

**comment:**
correct but with phonemic cue

# Testing

- We asked a group of colleagues for input and beta testing of CC

    - THANK YOU to Elise Elbourn, Gerasimos Fergadiotis, Jean Gordon, Melissa Johnson, Alyssa Lanzi, Jamila Minga, and Brielle Stark!

- We present some examples of their feedback and ideas
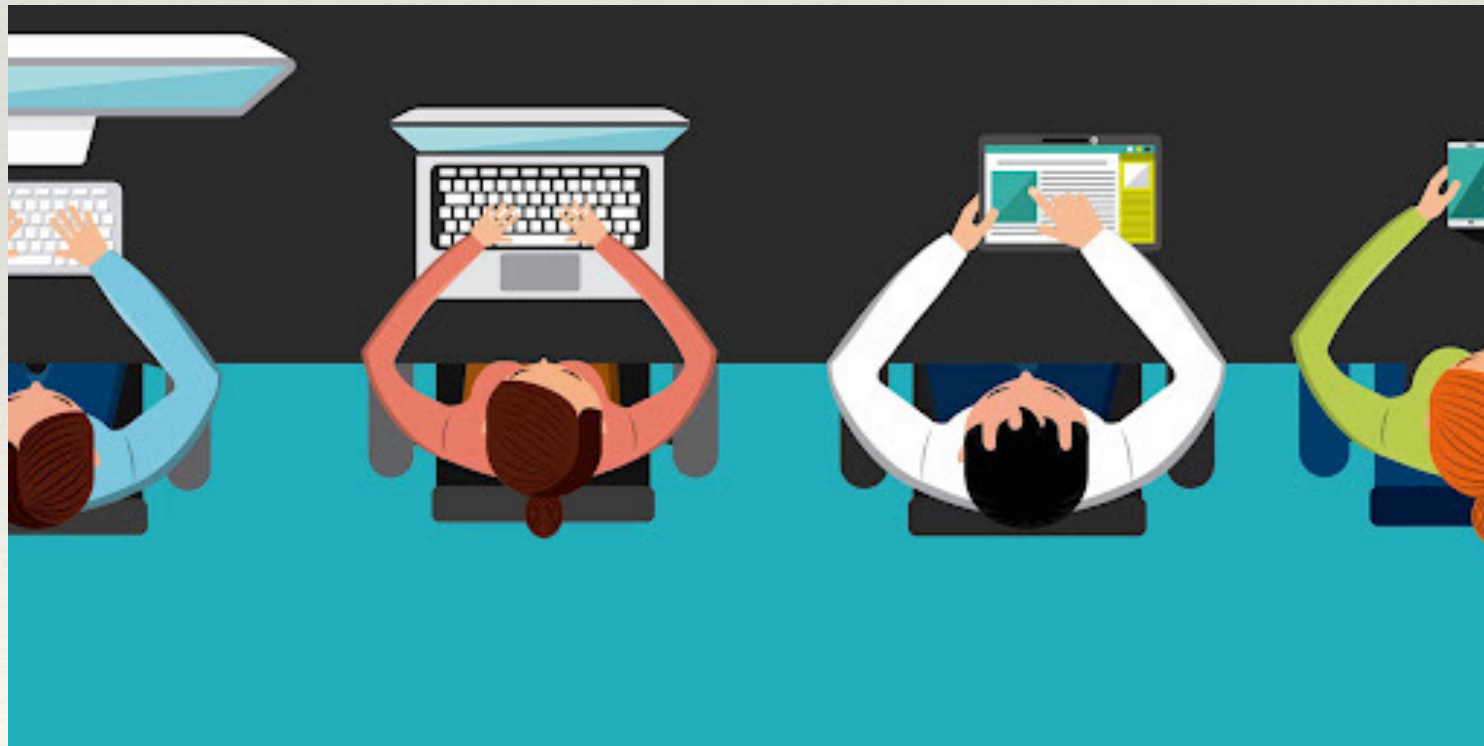
# Example 1: Brian's *Language and Thought* class

Students:

- ❖ went to CC in the Browsable Database

- ❖ played videos and read the text for 2 cases: 1 Broca's, 1 Wernicke's

- ❖ used codes and inserted comments about features that distinguished the two types of aphasia

# Examples – student's comments on Wernicke's aphasia

| 4 | Ⓒ | PAR: | &=head:no can't say &=ges:speech what it's saying . [+ gram] ▶ |
|---|---|------|------------------------------------------------------------------|
| 5 |   | PAR: | I don't want you're saying &=ges:hearing . [+ gram] ▶ |
| 6 |   | INV: | can't hear me ? ▶ |
| 7 |   | PAR: | say it it again ? [+ gram] ▶ |

**Utterance 4 to 7:**
Jabez Ahn:$ACOMP

**auditory comprehension issues – utterances 4-7**

| 122 | Ⓒ | PAR: | and when I'm thinking kinda but I can't say it . [+ gram] ▶ |
|-----|---|------|-------------------------------------------------------------|

**Utterance 122 to 122:**
Jabez Ahn:$ERR+ Interesting how he knows that he can think, but can't say what's in his mind

**self-awareness of errors in speech**

# Examples – student's comments on Broca's aphasia

**12** Ⓒ **PAR:** `&=head:shake long time ago . ▶`

Utterance 12 to 12:
Lucida Fu:$GRA, Very short phrases, missing words like "a"

**short phrases and agrammatism**

**43** Ⓒ **PAR:** `no [//] &d &n drive &=ges:drive no more . [+ gram] ▶`

Utterance 43 to 43:
Lucida Fu:$GRA

Jodie Hung:$GRA says "drive no more" instead of "I cannot drive anymore" missing function words

**agrammatism**

**anomia**

**95** Ⓒ **PAR:** `&=points:picture &-um fall down . [+ gram] ▶`
**96** **PAR:** `&=points:picture &-um &=wails:siren . ▶`
**97** Ⓒ **PAR:** `&=points:picture &-um dog . [+ gram] ▶`
**98** **PAR:** `&=points:picture &-um &-um klɑɪn@u [: climb] [* p:n] up a ladder . [+ gram] ▶`

Utterance 95 to 98:
Jodie Hung:$ANO uses of "um" and long pauses suggests that she is struggling to find words

# Brian's class, cont.

❖ Brian used CC for other class assignments with other TalkBank databases and codes for **child language behaviors** and **conversation analysis**

## Group "CHI-2" Tags

- **$ARG**: argumentation
- **$GES**: gesture
- **$HELP**: parents helping children with utterances
- **$IMIT**: imitation
- **$SELF**: expressions of self-image
- **$TEAS**: teasing
- **$TWO**: two-word utterances

## Group "CA-1" Tags

- **$ALIGN**: alignment
- **$DISP**: dispreferred response
- **$HEDGE**: hedge
- **$LAUGH**: laughter
- **$MIS**: misalignment
- **$OVER**: overlap
- **$PAIR**: adjacency pair
- **$PAUSE**: pause
- **$PITCH**: pitch change
- **$PRE**: presupposition
- **$PREF**: preference management
- **$PROJ**: turn projection
- **$REDES**: recipient design
- **$REPAIR**: repair
- **$TEMPO**: tempo
- **$TRBL**: trouble
- **$VOL**: volume change

# Valuable feature – direct email link for student feedback

**12** Ⓒ **PAR:** `&=head:shake long time ago . ▶`

**Utterance 12 to 12:**
<u>Lucida Fu:</u>$GRA, Very short phrases, missing words like "a"

---

To: lmfu@andrew.cmu.edu ∨

Cc:

Subject: TalkBank collaborative commentary

Dear Lucida,

    Concerning your comment in:
* Group: AB-2

* Utterances: 12 to 12

* In: https://sla.talkbank.org/testTBB/aphasia/English/Aphasia/Tucson/tucson14a.cha

* Stating: "$GRA, Very short phrases, missing words like "a""
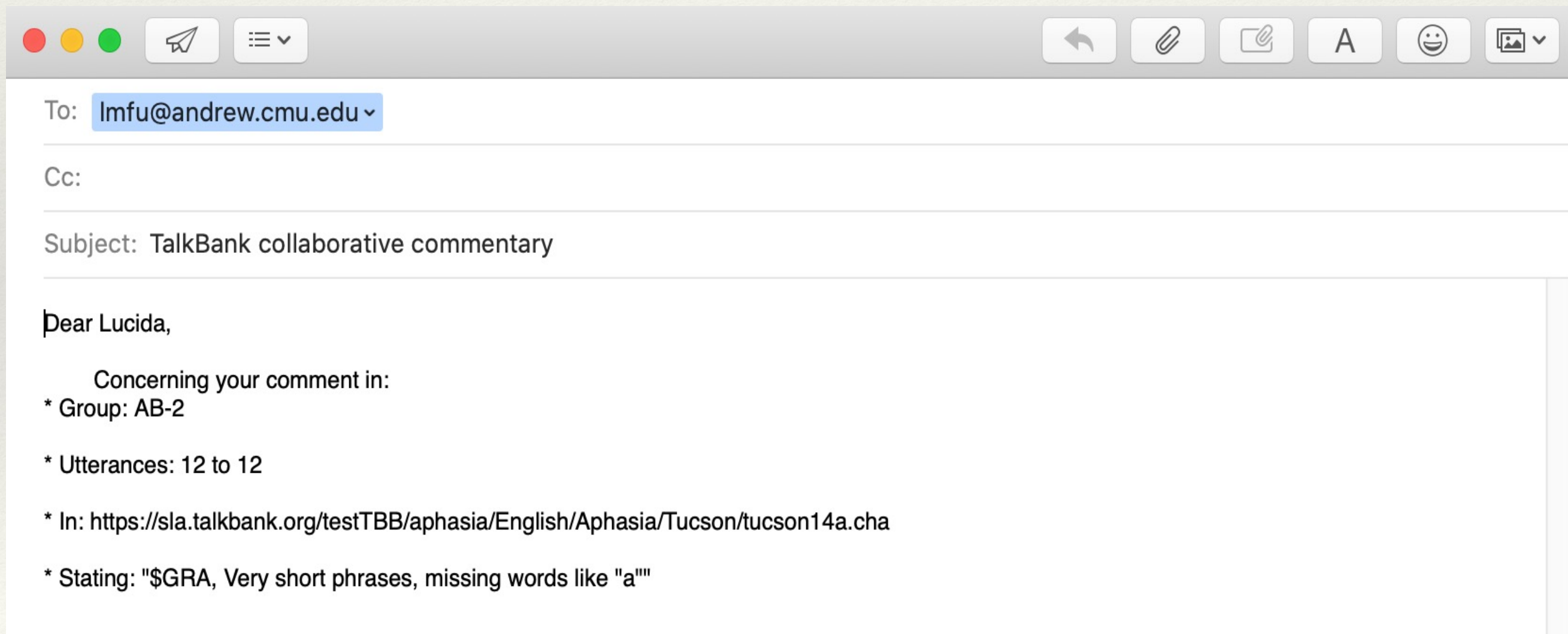
# Example 2: CC and Grand Rounds

❖ All 3 clinical Grand Rounds (GR) have many video examples used for instructional purposes

❖ We've created a GR corpus of those videos and transcripts for each of the databases so students can comment directly in the transcripts in response to discussion questions from the GR

# GR & CC example from TBIBank ...

❖ with thanks to Elise Elbourn and colleagues for these TBIBank Grand Rounds materials and ideas for classroom use ...

1. Video 6a shows a 56-year-old woman who presents with an aphasia in addition to a cognitive communication disorder as a result of a motor vehicle accident. In this video, she is producing the cat story retell and the procedural discourse tasks. Her Aphasia Quotient score on the Western Aphasia Battery-Revised (WAB-R; Kertesz, 2012) was 84, with predominant difficulties with naming and word-retrieval and relative strengths with auditory comprehension, automatic naming and repetition, consistent with mild anomic aphasia. Her performance on the Boston Naming Test (Kaplan, Goodglass, & Weintraub, 2001) was 10/60. What features of her spoken discourse are more consistent with aphasia vs cognitive-communication disorder?

# GR & CC example from TBIBank, cont.

Students would then:

❖ go to the Browsable Database

❖ sign into the CC group for that assignment

❖ watch the video and follow along in the transcript

❖ insert comments directly into the transcript, identifying features of the spoken discourse that are more consistent with aphasia vs cognitive-communication disorder

# from the Cat in the Tree picture description ...

Ⓒ comments entered in the transcript

for the TBI-GR group

- 5c_Insight ▶ [+]
- 5d_Motivation ▶ [+]
- 5e_Fatigue ▶ [+]
- **6a_Aphasia** ▶ [+]
- 6b_Dysarthria ▶ [+]
- 6c_Apraxia ▶ [+]
- 6d_Voice ▶ [+]
- 6e_Dysfluency ▶ [+]
- 6f_SpeechRate ▶ [+]

1:10 / 2:29

@G: Cat    🔍 ▭ | Collab Group: TBI-GR

```
1        INV: beginning a middle and an end . ▶
2        PAR: who knows ? ▶
3        PAR: dad has climbed the tree . ▶
4        PAR: who knows what he's climbed it for . ▶
5        PAR: there's a dog (.) barking at the bottom of the tree . ▶
6  Ⓒ    PAR: &-uh he may have gone up to get the cat down (be)cause the cat is stored at
the tree . ▶
7        PAR: &-um <it can't> [//] he's [/] he's out on the same branch . ▶
8        PAR: so ‡ that may be his &-uh reason . ▶
9        PAR: it's not to do with the [/] the bird . ▶
10       PAR: the bird's somewhere else . ▶
11       PAR: &-um the child is down under putting her hands up to the cat . ▶
12       PAR: so ‡ maybe dad is [*] being there to help out her worry . ▶
13 Ⓒ    PAR: &-um (..) some people coming in with &-uh +... ▶
14       PAR: the [/] the adequate people coming in with a [//] something [/] &-um
something to stand up against the tree and bring him down . ▶
```

**3** Ⓒ **PAR:** `dad has climbed the tree . ▶`

**4** Ⓒ **PAR:** `who knows what he's climbed it for . ▶`

**Utterance 4 to 4:**
[Elise Elbourn:](#)Difficulty understanding main idea or gist of the picture

**difficulty understanding main idea**

**6** Ⓒ **PAR:** `&-uh he may have gone up to get the cat down (be)cause the cat is stored at the tree . ▶`

**Utterance 6 to 6:**
[Elise Elbourn:](#)'stored' represents semantic paraphasia for word 'stuck' | spar | anom |

**semantic paraphasia, anomia**

**9** Ⓒ **PAR:** `it's not to do with the [/] the bird . ▶`

**10** **PAR:** `the bird's somewhere else . ▶`

**Utterance 9 to 10:**
[Elise Elbourn:](#)Irrelevant to story

**comment irrelevant to story**

**13** **PAR:** `&-um (..) some people coming in with &-uh +... ▶`

**14** Ⓒ **PAR:** `the [/] the adequate people coming in with a [//] something [/] &-um something to stand up against the tree and bring him down . ▶`

**Utterance 14 to 14:**
[Elise Elbourn:](#)adequate people | anom | spar |

**semantic paraphasia, anomia**

# Example 3: CC and Clinical Reasoning

❖ In AphasiaBank's Non-Protocol collection

| | |
|---|---|
| *Tucson* | Individual conversations between Audrey Holland and people with aphasia, one conversation between Audrey and the spouse of a person with aphasia. |

| | |
|---|---|
| *Holland2* | Four different people with aphasia -- interviews and various tasks. |

❖ 1 of these videos – Jean -- is a master class in Audrey's clinical expertise with a woman whose expressive output contained a lot of jargon.

# Clinical reasoning, cont.

❖ Students can use a set of tags – such as this sample set we created – to identify specific things Audrey does

❖ They can comment on any other relevant aspects of Audrey's conversational and clinical style

## Group "Clinical-1" Tags

- **comm-conv**: Conversational comment
- **comm-impr**: Comment on improvement
- **cues**: Provides cue
- **hum**: Uses humor
- **interp**: Interprets/restates
- **ques-c**: Uses closed questions
- **ques-o**: Uses open questions
- **reinf**: Reinforces use of strategy
- **sugg**: Suggests/models strategy
- **supp**: Supports/empathizes
- **time**: Gives time/slows pace

# from the Jean video ...

Ⓒ

comments entered

for the Clinical-1 group

---

**TalkBank:** AphasiaBank ⌄

aphasia / English / NonProtocol / Holland2 /

- Earl ▶️ [+]
- **Jean** ▶️ [+]
- John ▶️ [+]
- RRoss ▶️ [+]
- SW ▶️ [+]

---

🔍 | ⬜ | Collab Group: Clinical-1

```
@Begin
@Languages: eng
@Participants: JE Adult, AH Adult
@ID:    ng|Holland2|JE|||||Adult|||
@ID:    ng|Holland2|AH|||||Adult|||
@Med    Jean, video
@Comment: Conduction Aphasia - Casual Conversation
```

**1**     **AH:** Jean you (re)member a little earlier when we were coming over here you were telling me about one of your very wonderful trips . ▶

**2** Ⓒ **AH:** and I just wondered whether you could tell me a little about it again ? ▶

**3**     **JE:** well we &uh &uh tired it wery [: very] [* pn] good to go . [+ jar] ▶

**4**     **JE:** it wonderthalled@n . [+ jar] ▶

**5**     **JE:** but &uh it was &uh bery [: very] [* pw] good . ▶

**6** Ⓒ **AH:** did you go far away away from here ? ▶

**7**     **JE:** yes we went a long way about . ▶

**8**     **JE:** Down_signed [: Down_under] [* wk] inside [: Down_under] [* s] . [+ jar] ▶

**9**     **JE:** &=laughs . ▶

**10**     **JE:** all timed . [+ jar] ▶

**11**     **AH:** okay . ▶

**12** Ⓒ **AH:** did you go someplace that was in the southern hemisphere ? ▶

**13**     **JE:** yes I did . ▶

**14**     **JE:** and it was wonderful . ▶

**15**     **JE:** okay . ▶

**16** Ⓒ **AH:** did you go to Antarctica ? ▶

# Using a sequence of questions to prompt

**1**    **AH:** Jean you (re)member a little earlier when we were coming over here you were telling me about one of your very wonderful trips . ▶

**2** **C** **AH:** and I just wondered whether you could tell me a little about it again ? ▶

**Utterance 2 to 2:**
Davida Fromm: none ques-o 📝

**open-ended question**

**6** **C** **AH:** did you go far away away from here ? ▶

**Utterance 6 to 6:**
Davida Fromm: none ques-c 📝

**closed-ended question**

**12** **C** **AH:** did you go someplace that was in the southern hemisphere ? ▶

**Utterance 12 to 12:**
Davida Fromm: none ques-c 📝

**narrower closed-ended question**

**16** **C** **AH:** did you go to Antarctica ? ▶

**Utterance 16 to 16:**
Davida Fromm: none ques-c 📝

**even narrower closed-ended question**

# Supporting and suggesting and reinforcing

215  JE: +< I know what it is but I can't say it . ▶
216 Ⓒ AH: +< I know you do . ▶

**Utterance 216 to 216:**
Davida Fromm: none  supp  ▤

**supporting**

220  JE: +< I can't do that . ▶
221 Ⓒ AH: I know you can't . ▶

**Utterance 221 to 221:**
Davida Fromm: none  supp  ▤

**supporting**

215  JE: +< I know what it is but I can't say it . ▶
216 Ⓒ AH: +< I know you do . ▶

**Utterance 216 to 216:**
Davida Fromm: none  supp  ▤

**supporting**

223 Ⓒ AH: give it to me another way . ▶

**Utterance 223 to 223:**
Davida Fromm: none  sugg  ▤

**suggesting another approach**

149 Ⓒ AH: now <you did> [//] that was really nice you gestured my pocket really well +/. ▶

**Utterance 149 to 149:**
Davida Fromm: use of gesture  reinf  ▤

**reinforcing use of strategy -- gesture**

# Search Features of CC

## Search Collaborative Commentary
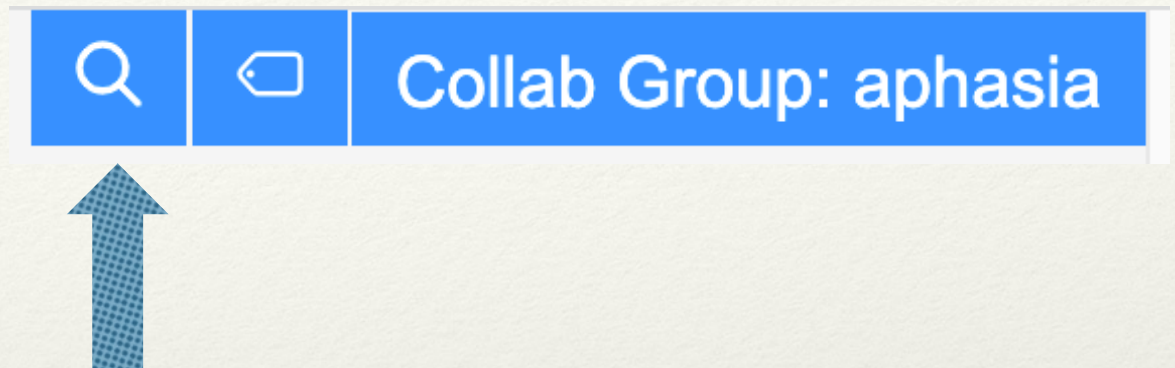
Find: [Comments by User ▾]

## Comments by User

### Fromm, Davida:

**aphasia:**
aphasia/English/Aphasia/ACWT/ACWT09a (utt 421 to 421)
aphasia/English/Aphasia/ACWT/ACWT09a (utt 427 to 427)
aphasia/English/Aphasia/ACWT/ACWT09a (utt 429 to 429)

### Gordon, Jean:

**aphasia:**
aphasia/English/Aphasia/Thompson/thompson04a (utt 318 to 318)
aphasia/English/Aphasia/Thompson/thompson04a (utt 324 to 324)
aphasia/English/Aphasia/Thompson/thompson04a (utt 328 to 328)
aphasia/English/Aphasia/Thompson/thompson04a (utt 329 to 329)
aphasia/English/Aphasia/Thompson/thompson04a (utt 330 to 330)
aphasia/English/Aphasia/Thompson/thompson04a (utt 330 to 330)
aphasia/English/Aphasia/Thompson/thompson04a (utt 331 to 331)
aphasia/English/Aphasia/Thompson/thompson04a (utt 339 to 339)
aphasia/English/Aphasia/Thompson/thompson04a (utt 340 to 340)
aphasia/English/Aphasia/Thompson/thompson04a (utt 345 to 346)
aphasia/English/Aphasia/Thompson/thompson04a (utt 357 to 357)

🔍 | ⬭ | Collab Group: aphasia

Using this search button, you can search within a group for **comments by users**

# Other Features of CC

**Search Collaborative Commentary**

Find: [Documents with Comments ⌄]

## Documents with Comments

**aphasia:**
aphasia/English/Aphasia/ACWT/ACWT09a (3)
aphasia/English/Aphasia/Thompson/thompson04a (14)
aphasia/English/Aphasia/Williamson/williamson23a (7)
aphasia/English/Aphasia/Wright/wright201a (5)

[🔍] [⬚] Collab Group: aphasia

Using this search button, you can search within a group **by documents with comments**

# Other Features of CC

**Search Collaborative Commentary**

Find: [ Tags                    ⌄ ]

## Tags

**aphasia:**

[ acomp ]

aphasia/English/Aphasia/Williamson/williamson23a (utt 273 to 273)

[ agram ]

aphasia/English/Aphasia/ACWT/ACWT09a (utt 421 to 421)
aphasia/English/Aphasia/ACWT/ACWT09a (utt 427 to 427)
aphasia/English/Aphasia/ACWT/ACWT09a (utt 429 to 429)
aphasia/English/Aphasia/Thompson/thompson04a (utt 330 to 330)
aphasia/English/Aphasia/Wright/wright201a (utt 124 to 124)
aphasia/English/Aphasia/Wright/wright201a (utt 125 to 125)
aphasia/English/Aphasia/Wright/wright201a (utt 126 to 126)
aphasia/English/Aphasia/Wright/wright201a (utt 127 to 127)
aphasia/English/Aphasia/Wright/wright201a (utt 128 to 128)

[ cir ]

aphasia/English/Aphasia/Williamson/williamson23a (utt 273 to 273)

🔍  ⬭  Collab Group: aphasia

⬆
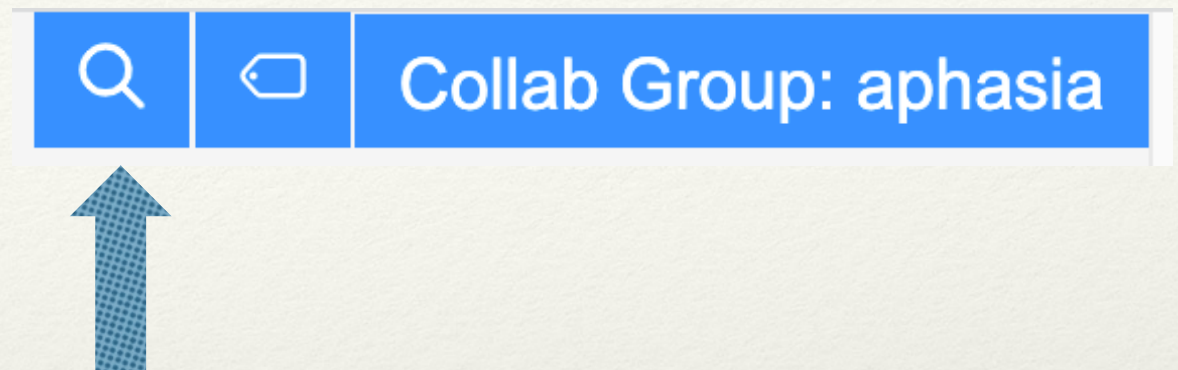
Using this search button, you can search within a group for comments **by tags**

# Other Ideas for CC -- Education

- Enhance student learning – classroom and clinic

  - Describe speech and language behaviors in people with different types and severities of aphasia (or apraxia of speech, RHD, TBI, dementia)

  - Compare and contrast language behaviors across disorders

  - Practice scoring BNTs, VNTs, WAB picture descriptions or other assessment instruments

  - Practice scoring discourse measures like CIUs, main concepts, global and local coherence

  - Learn treatment techniques through annotated demonstration videos

# Other Ideas for CC -- Research

❖ Evaluate reliability among coders/scorers
❖ Collectively evaluate and refine descriptions of behaviors of interests, such as:

  ❖ fluency
  ❖ anomia
  ❖ apraxia of speech
  ❖ agrammatism vs paragrammatism
  ❖ gestures

❖ Evaluate competing theories (e.g., test hypotheses concerning the relationship of paralinguistic aspects of communication to speech and to meaning)

❖ Conduct treatment fidelity checks in treatment studies

# Features in Development …

❖ Hide comments/tags from other users in group

❖ Output to spreadsheet format – tags

❖ Automatic computation of reliability

❖ Automatically linking un-transcribed media in 5 second utterances to allow for viewing and commenting

❖ New ones that you will suggest!

# THANK YOU to participants and colleagues who've contributed to AphasiaBank from these sites

Adler Aphasia Center
Aphasia Center of West Texas
Aphasia Center of California
Arizona State University
Boston University
Duquesne University
East Carolina University
Emerson College
InteRACT
Kathryn Garrett, Pittsburgh, PA
Montclair State University
Northwestern University
Snyder Center for Aphasia Life Enhancement
Stroke Aphasia Recovery Program
Stroke Comeback Center
Texas Christian University
Triangle Aphasia Project

University of Arizona
University of California, San Diego
University of Central Florida
University of Kansas
University of Kentucky
Univ. of Massachusetts, Amherst
University of New Hampshire
University of New Mexico
University of Redlands
University of South Carolina
Vanderbilt Univ. Medical Center
University of Colorado

University of Maryland
University of South Alabama

Austrian Academy of Sciences
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# THANK YOU to participants and colleagues who've contributed to RHDBank, TBIBank, and DementiaBank from these sites

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University of Oviedo, Spain

University of Valencia, Spain

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# The End

Grateful for your interest and attention

Looking forward to your collaborative commentary
on **Collaborative Commentary**

# Contact Info for Membership

❖ Email us:

    ❖ Brian MacWhinney – [macw@cmu.edu](mailto:macw@cmu.edu)

    ❖ Davida Fromm – [fromm@andrew.cmu.edu](mailto:fromm@andrew.cmu.edu)

❖ All faculty and licensed clinicians are eligible

❖ Send contact information and professional affiliation

❖ Include a BRIEF general statement about how you envision using the data or the website

# Financial Disclosure

❖ Brian MacWhinney receives some salary support from NIH-NIDCD Grant R01-DC008524 (AphasiaBank)

❖ Davida Fromm receives full salary support from NIH-NIDCD Grant R01-DC008524 (AphasiaBank)