

Segmentation tools for analyzing spoken discourse samples: Pitfalls and promises

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Introduction to the Session

- Agenda of the Session:
 - 1) Review grammatical tools (e.g., T-unit)
 - 2) Review semantic/meaning tools (e.g., content units)
 - 3) Review interactional discourse measures
 - 4) Conclusions, recommendations, questions

T-Units

T-unit - popular unit of analysis in adult neurogenics
applied to spoken discourse across populations and
discourse genres

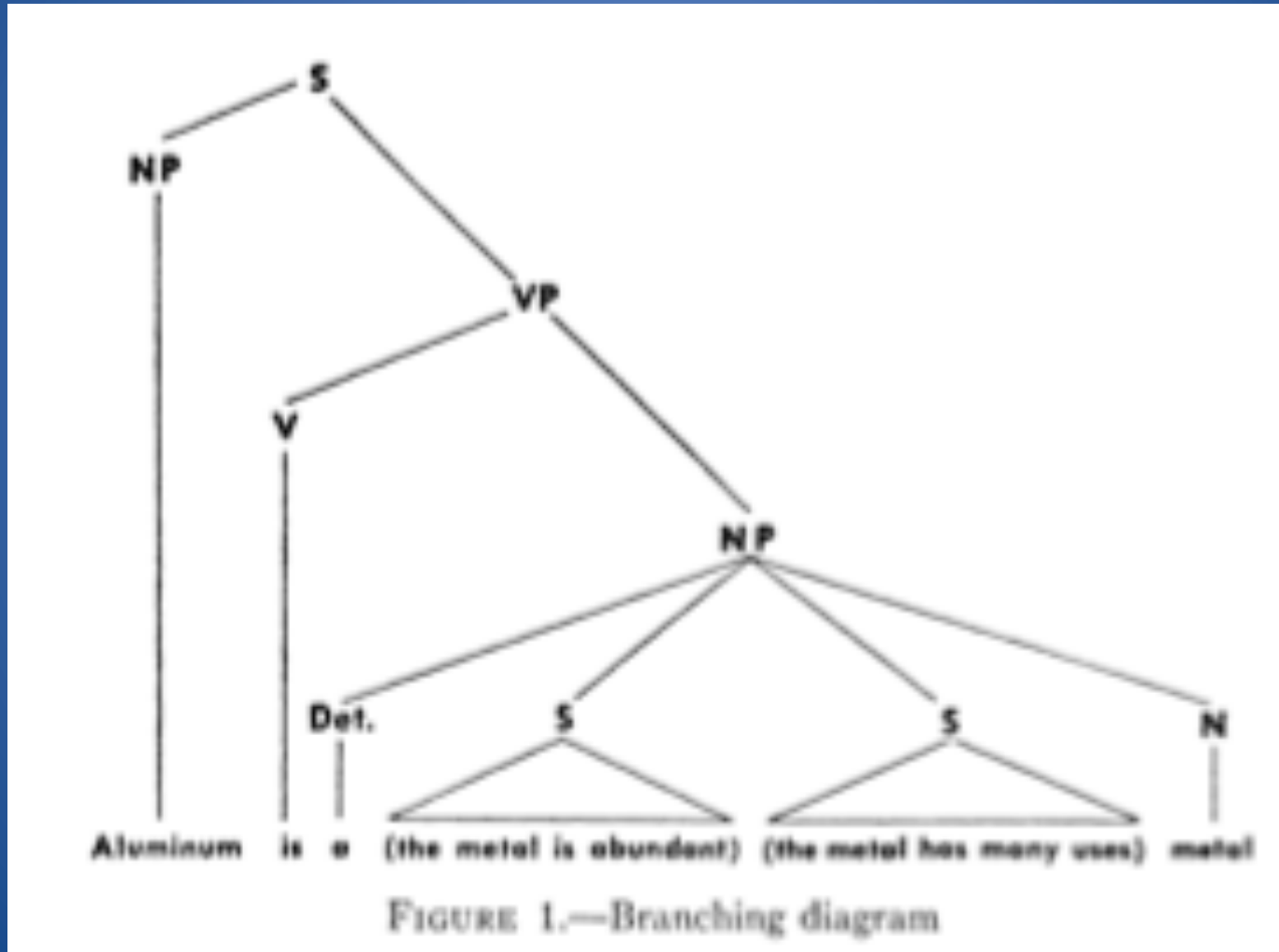
- One main clause with all subordinate clauses attached to it (Hunt, 1965; 1970)

Video

History of T-Units

- Hunt (1965; 1970)
- Syntactic development in written work of schoolchildren
- Theoretically based on early version of transformational-generative (TG) grammar (Chomsky, 1957)

Aluminum is an abundant metal with many uses.



(Hunt, 1970, p. 26)

T-Units: Promises and Pitfalls

- Validity
 - theoretical assumptions no longer valid
 - developed for written discourse
 - “inadequate to deal with spoken discourse” (Foster et al., 2000)
 - disfluencies, limited productions
 - conversation or interactional samples
 - developed on and for healthy children
 - never validated on or for adults

T-Units: Promises and Pitfalls

- Reliability

- Studies cite Hunt, offer uncomplicated examples, but provide no details or inadequate details on the particulars of the coding
- “This places a burden on the individual researcher to make judgments and changes to the T-unit application that are seldom detailed in the analysis” (Foster et al., 2000).

T-units: What it offers

Need a common measurement base for various other analyses (e.g. words per t-unit, verbal disruptions per t-unit, t-units per discourse sample)

Meaning, talk and interaction

- T-units/syntactic measures
- Content/Semantic units
- Blended units
- Interactional units
- IDRs (Interactional Discourse Resources)

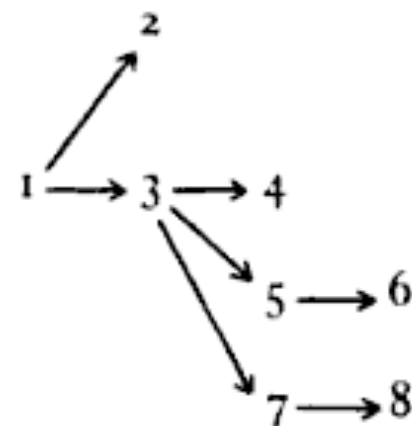
Semantic/Content Units

- Type/token
 - Different words/all words
- Lexical density (content to grammatical)
- Propositions
- Correct Information Units

Propositions

(22) Cleopatra's downfall lay in her foolish trust in the fickle political figures of the Roman world.

- 1 (BECAUSE, α , β)
- 2 (FELL DOWN, CLEOPATRA) = α
- 3 (TRUST, CLEOPATRA, FIGURES) = β
- 4 (FOOLISH, TRUST)
- 5 (FICKLE, FIGURES)
- 6 (POLITICAL, FIGURES)
- 7 (PART OF, FIGURES, WORLD)
- 8 (ROMAN, WORLD)

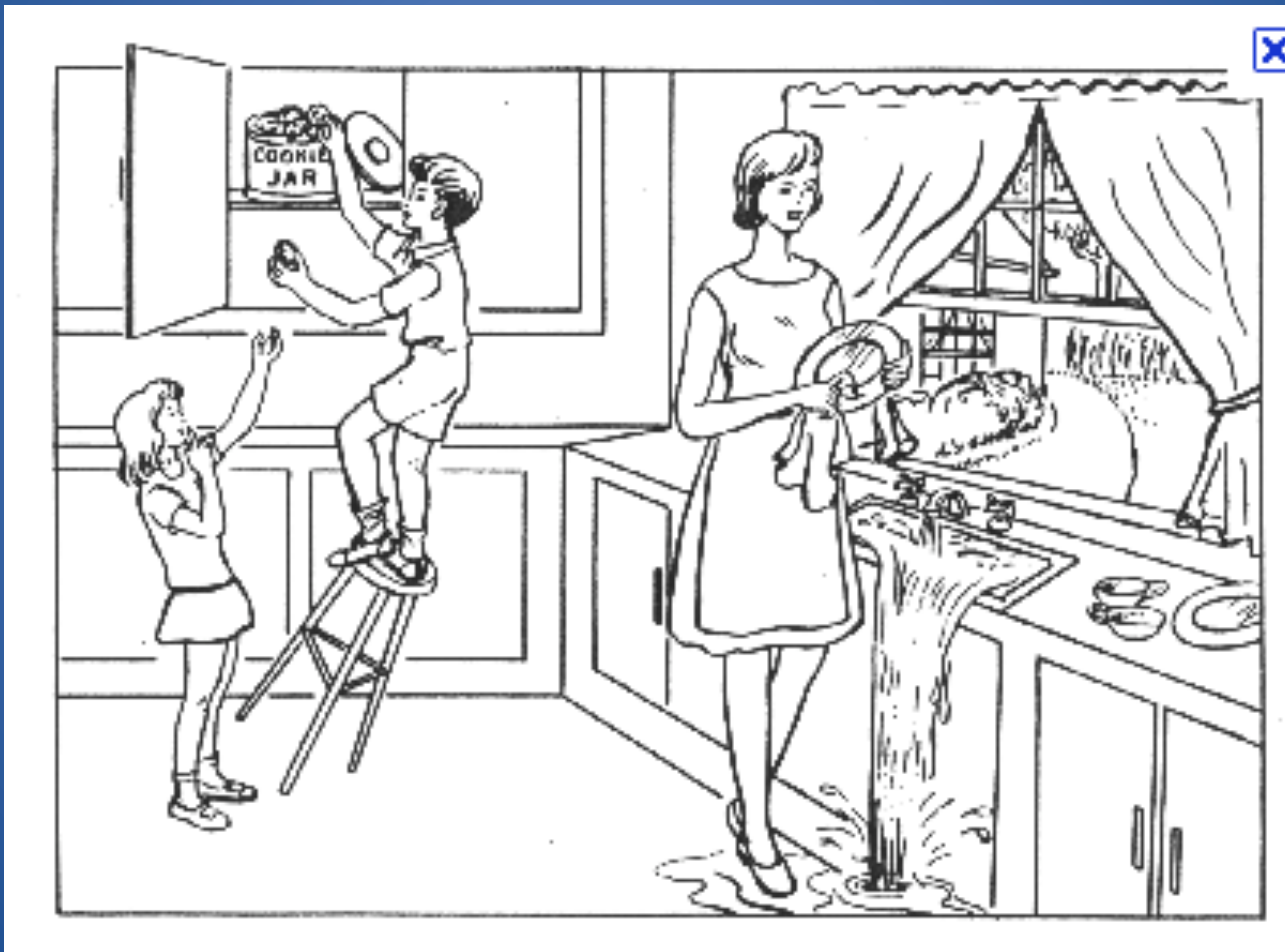


From Brown & Yule, (1984)

Correct Information Unit slides

- Nicholas, L. & Brookshire, R. (1995). Presence, completeness, and accuracy of main concepts in the connected speech of non-brain-damaged adults and adults with aphasia. *JSHR*, 38, 145-156.
- “A standard rule-based system...to evaluate the *presence, accuracy, and completeness* of main concepts in the connected speech of 20 non-brain-damaged adults and 20 adults with aphasia.”
 - Content of the message, not the form
 - Main ideas (macrostructure, Kintsch & van Dijk) more salient than details

Cookie Theft



From the BDAE

Rules for Scoring Main Concepts

- You will be deciding if the essential information in each main concept for a story or procedure was mentioned in an accurate and complete form. For each main concept you will give one of four main scores:
 - **AC:** accurate and complete
 - **AI:** accurate but incomplete (one or more parts is missing)
 - **IN:** inaccurate (one or more parts is inaccurate) may be double coded here as IN-IC
 - **AB:** Absent (none of the essential information is given for that concept)

1. THE WOMAN (MOTHER) IS DOING DISHES.

AC

Nancy washing the dishes.
The mother is drying a plate.
The maid is cleaning the dishes.
Mother do dishes.

AI

The mother is standing by the sink.
Mother dishes.
Lady with dishes.

IN

The woman is washing clothes.
The mother he is washing dishes.

**4. THE BOY (KIDS) IS GETTING (STEALING) COOKIES
(GETTING INTO THE COOKIE JAR).**

AC

Junior is climbing where he shouldn't be to get cookies.

Kids getting into cookie jar.

Jack is up in the cookie jar.

AI

Her daughter and son want to have cookies.

Junior is up in the cupboard.

Cookie jar cabinet.

Two kids cookie jar.

IN

A boy about to steal cookie jars.

The children are reaching into the cookie jar.

They are climbing up to get some cookies.

Blended units

- Involve multiple dimensions (syntax, meaning, prosody, gesture)
 - Idea units (Chafe 1980, 1992)
 - Information units (Gumperz 1992)
 - Lines/verses & stanzas (Hymes, 1981; Gee 2000)
 - Mental spaces (Cienki 2008)

Idea Units (Chafe)

- (12) a(A) ... Cause I had a ... a thick párch of bárley there, (state)
b(B) ... mhm, (regulatory)
c(A) .. about the size of the .. kítchen and living
room, (state)
d(A) ... and I went òver ít, (event)
e(A) .. and then, (regulatory)
f(A) ... when I got dóne, (event)
g(A) I had a little bit léft, (state)
h(A) .. so I tùrned aróund, (event)

Information Units (Gumperz)

1D: this is not a-

1L: == of *course/ {[ac] it is not a secret//}

2D: =that it *is a secret*//=

2L: (1) =I haven't "said= it's a secret//

(2) {[ac] I didn't say it was a secret//}

(3) what I *said was/

(4) ..that it was *not a suitable course/ ..for you to *apply for//

(5) because it is ()//

(6) .. {[lo] now if you *want to apply for it/}

(7) .. {[hi] of *course/} you can do what you *want//

(8) but/ {[hi] if you are *doing the twilight course at the *moment/}

(9) .. {[lo] it was *not something which-}

(10) .. Mrs N and Mr G *thought/ *originally/

(11) that it was a course to carry *on/ *with the *twilight course/

(12) {[hi] but this is NOT the case//}

Lines and Stanzas (Hymes)

Seal and her younger brother lived there

[i. *The “wife” comes*]

- | | | | |
|-----|-----|---|----|
| (A) | (1) | They lived there, Seal, her daughter, her younger brother. | 1 |
| | | After some time, now a woman got to Seal's younger brother. | 2 |
| (B) | (2) | They lived there. | 3 |
| | | They would 'go out' outside in the evening. | 4 |
| | (3) | The girl would say, | 5 |
| | | she would tell her mother: | 6 |
| | | “Mother! Something is different about my uncle's wife. | 7 |
| | | “It sounds just like a man when she 'goes out.’ ” | 8 |
| | (4) | “Shush! Your uncle's wife!” | 9 |
| (C) | (5) | A long long time they lived there like that. | 10 |
| | | In the evening they would each 'go out.' | 11 |
| | (6) | Now she would tell her: | 12 |
| | | “Mother! Something is different about my uncle's wife. | 13 |
| | | “When she 'goes out' it sounds just like a man.” | 14 |
| | (7) | “Shush!” | 15 |

Lines, Stanzas, Genres

PART I: SETTING

STANZA 1

1. Last yesterday in the morning
2. there was a hook on the top of the stairway
3. an' my father was pickin' me up
4. an' I got stuck on the hook up there

STANZA 2

5. an' I hadn't had breakfast
6. he wouldn't take me down
7. until I finished all my breakfast
8. cause I didn't like oatmeal either

PARTT II: CATALYST

STANZA 3

9. an' then my puppy came
10. he was asleep
11. he tried to get up
12. an' he ripped my pants
13. an' he dropped the oatmeal all over him

Gee 2010

Mental spaces

- Tracing Fauconnier and Turner's "small conceptual packages" in talk (idea units but also marked by gesture). Cienki (2008) analyzes a videotape of a student:
 - It depends [hands palm down, settle in a space on her right side] on the student,
 - But it also [hands lift and settle on her left side] depends on the teacher.

Interactional Units

- In talk (or written dialogue, like instant messaging), analysis can focus on the multiparty character of discourse.
 - A: I went to=
 - B: =Bob's house,
 - A: And told him about the party.
 - B: Whoa

Interactional Units: Conversation Analysis

- Adjacency pairs (two-part turn taking with optional third—question-answer, greeting-greeting)
- IRE—an institutionally specialized form of adjacency pair plus repair.
- Turn constructional units: Schegloff (2007) notes that these involve form (sentence, clause, phrase, word), intonational packaging, gestures (particularly gaze), but also represent a recognizable action in the context

Turn Construction Units

L: Is it done? The movie.

A: Not yet.

Conversation Analysis (CA)

(4) SN-4: 02:23-33

Sherri: [Look once a quarter et school is enough.=That's uh:: (·)
finals.

(??): {huh-}

--> Mark: I know whutcha mean. Me t[oo.<that's why I came here d'night.=

(??): [*(Wha-)*]

--> Mark: ='hh I came tih talk tuh Ruthie about borrowing her:-
notes.fer (·) econ.
(0.8)

Ruthie: [Oh.

Sherri: [You didn't come t' talk t' Kerin?
(0.4)

Mark: No, Kerin: (·) Kerin 'n I 'r having a fight.

Schegloff 1994

Research Program Studying the Discourse Practices of Individuals with Aphasia and Amnesia and their Routine Communication Partners

Interactional Discourse Resources (IDRs)

1. *Collaborative Referencing (Hengst, 2003; Duff et al., 2006)*
 2. *Verbal Play (Hengst, 2006; Duff et al., 2009)*
3. *Reported Speech (Hengst et al., 2005; Duff et al., 2007)*
4. *Conversational Narratives (Hengst & Duff, 2007)*

Interactional Discourse Resources (IDRs)

- Concept consistent with **situated** theories of communication
 - Focusing on **communicative activities**
...not isolated productions (e.g., speech sounds),
modalities (e.g., auditory comprehension), or forms (e.g.,
past tense, Spanish)
- **Working definition...**
IDRs are recognizable discourse patterns that participants use as resources to **contextualize** linguistic (and other **semiotic**) resources during interaction.
 - Marked management of frames
 - May be realized in a variety of ways

IDR #1--Collaborative Referencing

Aligning within a *frame of reference* by establishing:

...*joint attention on an object*

e.g., looking at the same thing

...*a shared perspective*

e.g., seeing an object in the same way

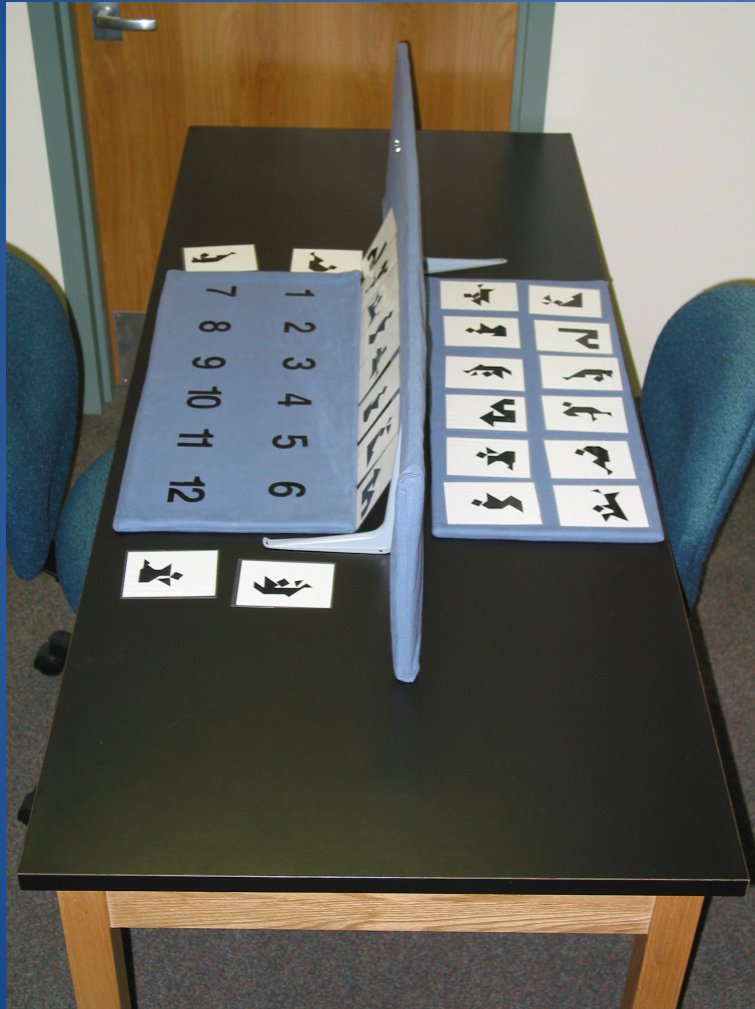
...*developing shared labels*

e.g., verbal, nonverbal

...*within the same contextual frame*

e.g., as a game, a challenge, service encounter

Adapted Barrier Task



Collaborative Referencing

When two people use language, it is like shaking hands, playing a piano duet, or paddling a two-person canoe: It takes coordination, even collaboration, to achieve.

(H. H. Clark, 1992, p. xvi)

Adapted Barrier Task

Barrier Task Game

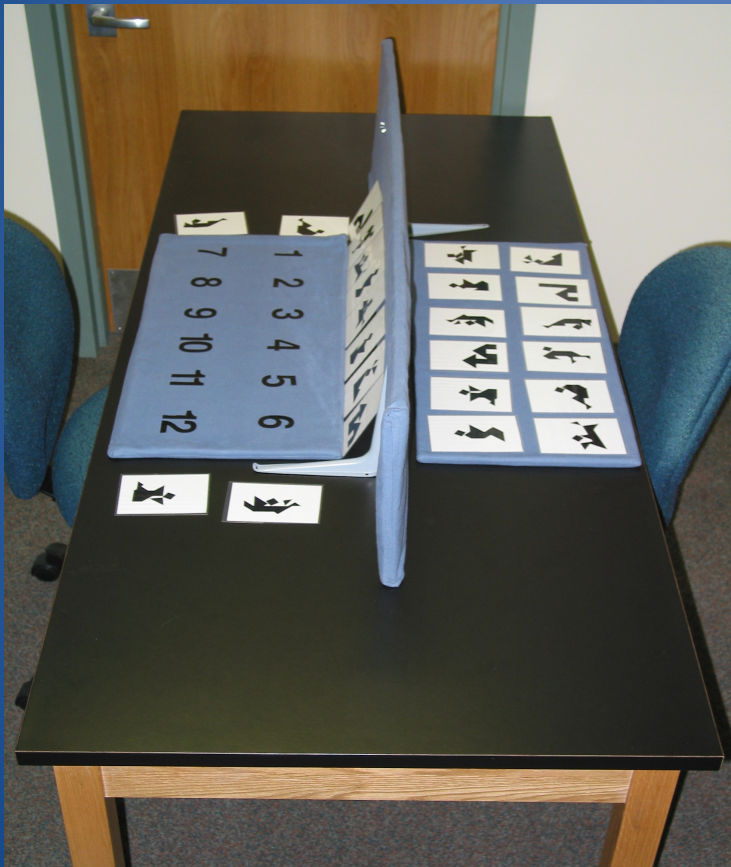
Goal: Matcher needs to place cards on his/her board so they match director's board

Rules: Communicate freely, but don't look over barrier

Cards: tangram shapes; photographs

Protocol: Play 6 trials, in each of 4 sessions

Provides repeated opportunities for pairs to reference target cards in a meaningful activity

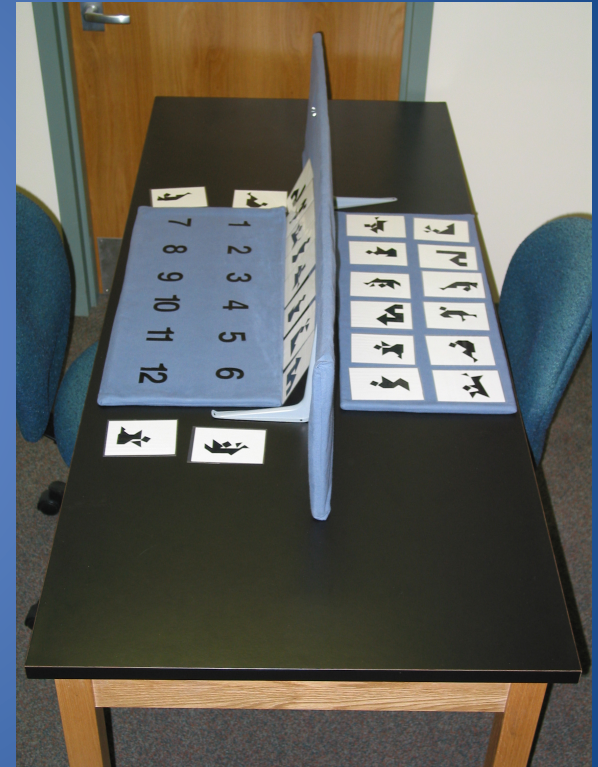


Documenting Collaborative Referencing

The Barrier Task Sessions

Measure Pair's Referencing Success

1. Accuracy of Card Placement
 - Correct # / 12 cards per trial
2. Overt collaborative effort
 - words, turns, time
 - Should decline across trials
3. Establish unique card labels
 - Should stabilize across trials
 - Should simplify across trials



IDR #2--Verbal Play

*Aligning within a **play frame***

- Plays on sounds, words, meanings
 - Puns, jokes, repetition
 - Verbal dueling
 - Funny stories
- Mischievous acts
 - Tricking, teasing
 - Boasting, bragging, self-deprecating
 - Telling tall tales



Mischief and play routinely involve creative slippage in categories and shifts in framing

Analyzing the Playful Episodes

Interactional Form

Simple, brief occurrences

Stand-alone

Exchange

Extended

Resources Used

Verbal

Prosodic

Gestural

Communicative Functions

Teasing

Referencing

Narrative

Other (e.g., Passing time or self amusement,
initiating complaints, criticisms)

IDR #3--Reported Speech

Shifting the **speaker frame** in order to quote or paraphrase words from another time or place, foregrounding in one utterance multiple speakers and multiple contexts.

- *John said, “I’ll come at eight o’clock!”*
- *John said that he would be here at eight o’clock.*
- *John told me that he would come at eight o’clock!*

Reported speech is a creative practice

- *“Reporting” other’s words for your own purposes*
- *Constructed dialogue, with little emphasis on veracity*

Reported speech is robust

- Rarely does the frame shift lead to communication breakdowns

Reported speech is pervasive

News, gossip, stories, indeed the whole fabric of everyday conversation depends heavily on quoting or referring to the words of others, and it is hard to imagine a day of our lives when we do not at some point support our discourse with direct or indirect reference to someone else's words.

— (McCarthy, 1998, p. 150)

Findings:

Reported speech and aphasia

509 Reported Speech Episodes (RSE)

- *149 by participants with aphasia*
- *251 by partners*
- *109 by others*

25/28 sessions contained RSE(s)

19/28 sessions both partners produced RSE

All 14 participants produced RSE

- Average 28.5 RSEs/pair (range 1-78)

Majority of RSEs were accurate & complete

- 60% for aphasic participants; 85% for partners

Types of RS used

- **Direct RS-- 49% (197/400)**
 - *And she said, “I don’t even remember who you a--, what your name is.”*
- **Indirect RS-- 21% (83/400)**
 - Your mother says that you will begin...another master’s degree.
- **Projected RS-- 16% (63/400)**
 - I could have said, “Nope, you can’t get it.”
- **Indexed RS-- 5% (19/400)**
 - That’s what he was saying on the way home.
- **Undecided-- 9% (38/400)**
 - And he says...they we’re sure you’re not we aren’t sure of it.

89% (346/400) were framed, or set up, as RS

IDR #4--Conversational Narratives

Diverse production & form

- **Range of types & topics**
personal narratives; synopses of books/
movies; historical accounts; folk tales
- **Open-ended accounts**
unplanned; unpracticed; unresolved;
contested;
developing accounts
honing narratives through retellings
- **Minimal elements**
two events
- **Blends with conversation**
embedded in conversational themes & topics
distributed across participants & turns

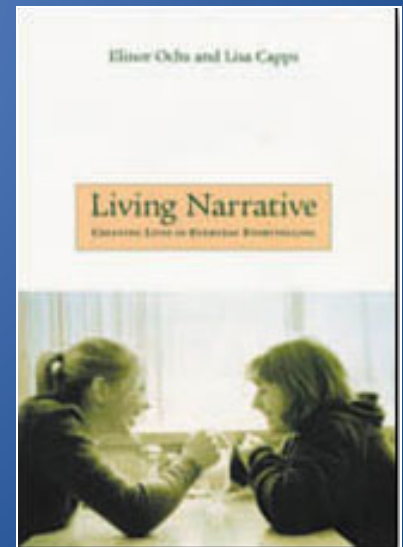
Recognizable

- **Frame shift**
Temporal
past, future
Reality
Hypothetical; make-believe;
Social
Event-casting; make-believe
play
- **Specific, focal events**
e.g., one-time actions,

IDR #4--Conversational Narratives

*“Acquired in childhood, **personal narrative** is ubiquitous. Whether in a store, along the road, at work, play, home, or other community settings, when people are together, they are inclined to **talk about events**—those they have heard or read about, those they have experienced directly, and those they imagine. Their talk about such events often takes the form of personal narrative.”*

Ochs & Capps, 2001, pp 1-2.



Dimensions of Conversational Narrative

Embeddedness

Embedded ----- Detached

Tellership

Co-tellers ----- Single teller

Tellability

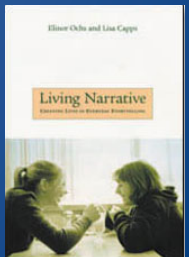
Low ----- High

Linearity

Open temporal/causal ----- Closed temporal/causal

Moral Stance

Uncertain & fluid ----- Certain & constant



Video

Conclusions, Recommendations, Discussion

- Theory matters
 - Discourse segmentation tools emerge from theoretical traditions and assumptions
- Our take: when and how do we use these tools
 - T-units
 - Content units
 - International discourse resources
- Accountability