Don't Say No Until I'm Finished Talking: Persuasive Discourse of High School Students

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Disclosures

Authors Heilmann, Malone, and Westerveld declare they have no interests relevant to the content of this presentation that would compromise or have the potential to compromise their professional judgment. In particular, they have no financial stake in SALT Software, LLC, which transcribed the language samples under discussion.

The transcription was provided as an in-kind service. Data derived from the samples will be incorporated into future versions of the software program Systematic Analysis of Language Transcripts (SALT).

Karen Andriachi is an employee of SALT Software, LLC.

Finally, the SLPs and graduate students who collected the samples have no financial interest in SALT Software, LLC.

Overview of Persuasive Project

✓ Problem: School-based SLPs are required to assess and treat persuasive skills in their students with language problems, yet lack adequate elicitation procedures and benchmarks to carry out this mandate.

✓ Subjects: Typically developing (TD) high school students in grades 9-12 in
> Wisconsin, U.S.A = 113 students
> Queensland, Australia = 66 students

✓ Speaking Task: Role-play an argument that seeks to change a policy at school, work, or in the community.

✓ Language sample analysis: The software Systematic Analysis of Language Samples (SALT) (Miller & Iglesias, 2012). was used to generate measures of syntax, semantics, productivity, and pragmatics.

✓ Data was analyzed for differences related to gender, issue, grade, and nation

✓ A case study of a student with a language impairment will be presented

Follow up to Exposition Study

✓ Problem: Exposition is embedded in the curriculum of pre-teen and teen-age students, yet SLPs lacked an authentic assessment and benchmarks for this type of discourse.

✓ Speaking Task: Students pick a favorite sample or sport (FGS), take time to plan, and then explain to an adult naïve listener how to play.

✓ Subjects: 235 typically developing TD students from Wisconsin in grades 5 through 9 (age range: 10;7 – 15;9)

✓ Results: Engaged students produced
  - 50-60 utterances and 11-12 words per C-unit
  - Slow but steady progress across grades.
  - Factor analysis effectively classified language measures into four distinct dimensions: Syntactic complexity, expository content, discourse difficulties, and lexical diversity.

✓ Payoff: Elicitation protocol and benchmarks are available in Heilmann & Malone (2014) and in the SALT software. SLPs can compare the performance of their LI students to that of TD peers.
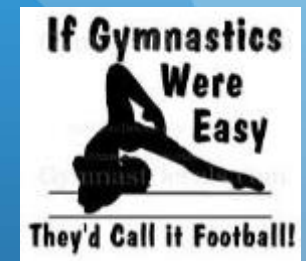
What is Persuasion?

"Persuasion involves the use of argumentation to convince another person to perform an act or accept the point of view desired by the persuader." *Nippold, 2007*

Unpacking Nippold's definition:

✓ *the use of argumentation:*

   implies a discourse structure that differs from narration or exposition

✓ *to convince another person:*

   implies that persuasion is social and is directed to a specific audience

✓ *to perform and act or accept the point of view desired by the persuader:*

   implies that persuasion can serve different ends:

   • External—the audience agrees to take a certain action

   • Internal—the audience assents to a certain viewpoint

   • Combination of external and internal ends
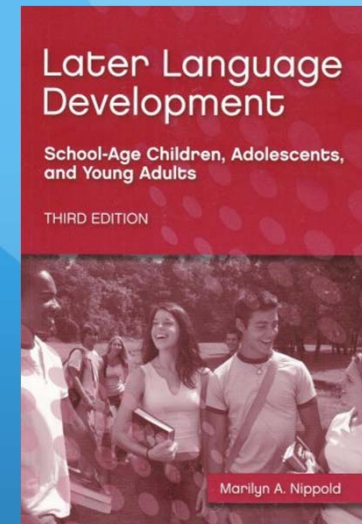
Why Persuasion Matters

Like exposition, persuasion:

✓ Figures prominently in academic standards in both the U.S. and Australia, especially for older students.

✓ Is critical to success in college and career and to full participation in social and civic life.

✓ Is included in high-stakes educational testing, e.g., district- and state-wide writing tests, ACT, SAT.

✓ Challenges students to use complex language to express complex ideas and to take into account their audience's perspective.

✓ Despite its importance, is not well represented in the omnibus standardized tests commonly used by SLPs, e.g., CELF-5, CASL, OWLS.

✓ Should be assessed through language sampling, according to some authorities on evaluation, e.g., Paul & Norbury (2012) and Nippold (2014).

U.S. Academic Standards

COMMON CORE STATE STANDARDS INITIATIVE

District of Columbia	Puerto Rico	Guam
American Samoan Islands	US Virgin Islands	Northern Mariana Islands
Department of Defense Education Activity		

Adopted — Not Adopted

Alaska
Hawaii

✓ Widespread—though not universal— adoption of Common Core State Standards (CCSS) in the U.S. and its territories
http://www.corestandards.org/standards-in-your-state/

✓ Non-CCSS states have similar standards for persuasion, e.g., Indiana (Indiana Department of Education, 2014) and Virginia (Virginia Department of Education, 2010).

Place of Persuasion in the CCSS

The CCSS recommends that persuasion play a major role in reading and writing and that role increases with advancing grades.

Percentage distribution of reading, by grade and communicative purpose		
Grade	Literary	Informational
4	50	50
8	45	55
12	30	70

Percentage distribution of writing, by grade and communicative purpose			
Grade	To Convey Experience	To Explain	To Persuade
4	35	35	30
8	30	35	35
12	20	40	40

Qualification: CCSS adopts "an integrated model of literacy" that recognizes that in practice genres and modalities are blended, e.g., this convention presentation.
National Governors Association, Council of Chief State School Officers, 2010

CCSS Standards for Persuasion

✓ Persuasion is represented across modalities, i.e., reading, listening, speaking, and writing.

✓ Within each modality, expectations increase at each grade level. Refer to "Vertical Integration" handouts from the Wisconsin Department of Public Instruction.

✓ Career and College Readiness (a.k.a., CCR or Anchor) Standards for Persuasion
Reading
  • Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
  • Suggested texts: Seminal U.S. texts, e.g., U.S. Supreme Court majority opinions and dissents, The Federalist Papers, presidential addresses

Listening
  Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.

Speaking
  Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.

Writing…

K-12 Persuasive Writing Strand

Anchor Standard

Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

Kindergarten

Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book (e.g., My favorite book is...).

Grade 5

- ✓ Range: Write opinion pieces on topics or texts
- ✓ Organizational structure:
  - Introduce a topic or text clearly
  - State an opinion
  - Logically group ideas and reasons to support the writer's purpose
  - Provide a concluding statement related to the opinion presented
- ✓ Content
  - Support a point of view with reasons
  - Support reasons with facts and details.
- ✓ Cohesion: Link opinion and reasons using words, phrases, and clauses
    (e.g., consequently, specifically).

Persuasive Writing in Grades 11-12

- ✓ Range: Write arguments to support claims in an analysis of substantive topics or texts
- ✓ Organization
  - Introduce precise, knowledgeable claims
  - Establish the significance of the claims
  - Distinguish the claims from alternate or opposing claims
  - Logically sequences claims, counterclaims, reasons, and evidence
  - Provide a concluding statement that follows from and supports the argument presented
- ✓ Content
  - Develop claims and counterclaims fairly and thoroughly
  - Use valid reasoning and relevant and sufficient evidence.
  - Point out the strengths and limitations
  - Anticipate the audience's knowledge level, concerns, values, and possible biases.
- ✓ Cohesion
  - Use words, phrases, and clauses as well as varied syntax to link the major sections
  - Clarify the relationships between claims and reasons, between reasons and evidence, and between claims and counterclaims.
- ✓ Voice
  - Establish and maintain a formal style and objective tone
  - Attend to the norms and conventions of the discipline in which they are writing.
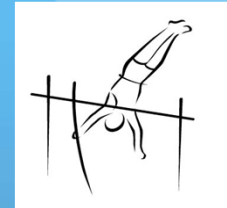
Persuasion is Ubiquitous...

…in the the high school curriculum, according to the CCSS:

✓ <u>English/Language Arts</u>: Make claims about the meaning or
worth of literary work.
    Example: In the novel *The Great Gatsby*, the green light
at the end of Daisy's dock symbolizes the American Dream.

✓ <u>Social Studies</u>: Defend interpretations of historical events.
    Example: The principal cause of the U.S. Civil War was
economic rivalry between the North and the South, not the abolition of slavery.

✓ <u>Science</u>: Support conclusions that answer experimental questions.
    Example: The frequency of sound from a tuning fork decreases as the
temperature increases.

But how authentic or engaging are these examples?
- All involve a change of mind, not of behavior
- Are directed only at a teacher in a particular discipline
- Are unlikely to touch students' lives a direct or deep way.

Similar Expectations
in Australia

Australian CURRICULUM

✓ Australia is in the process of implementing national curriculum, which includes academic standards that parallel the CCSS.

✓ Like the CCSS, the Australian standards for persuasion cut across:
- Grade levels: Foundation (= Kindergarten)
  through Senior Secondary (= Grades 11-12)
- Modalities: Listening, speaking, reading, **viewing** and writing
- Settings: Academic, vocational, community.

✓ As with the CCSS, persuasion plays a key role.
In Grades 11-12, students are expected to:
- Construct coherent, compelling and logically sustained arguments
- Support with relevant evidence and examples
- Demonstrate an understanding of purpose, audience, and context.
- Communicates ideas with fluency and sustained control of expression.

Australian Curriculum, Assessment and Reporting Authority (ACARA) (2015)

The Importance of Being Persuasive

After high school, skill at persuasion is critical for:

✓ "College and career readiness"
        (CCSS for English Language Arts)

✓ "Personal satisfaction [and] social success"
        (Nippold, 2007).

✓ "The engineering of consent…central to our democratic society."
        (Brooks & Warren, 1972)

Transition Requirements of IDEA

IEPs for students 16 years and older must contain "transition services" designed to help them achieve their goals for:

✓ Post-secondary and vocational education

✓ Employment

✓ Independent or community living

Individual with Disabilities Education Act (2004)

Literature Review: TD Individuals

Nippold (2007) summarizes literature on persuasion:

✓ Viewed as late developing skill because younger children lack the complex syntax, abstract thinking, and perspective taking that this genre requires

✓ In order of increasing syntactic complexity:

Conversation < Narration < Exposition < Persuasion

✓ Less formal persuasive language used with peers and familiar adults
  More formal language with unfamiliar authority figures

Nippold, et al. (2005) examined persuasive writing

✓ Subjects: 11, 17, and 24 years

✓ Task: persuasive essay on "whether or not circuses with trained animals should be allowed to perform for the public."

✓ Results

  • Age-related Increases: MLU, total utterances, number of reasons, reasons offering a different perspective from the writer's.

  • Adult subjects (university students) averaged

    ➢ 17 total utterances
    ➢ MLU of 16 words
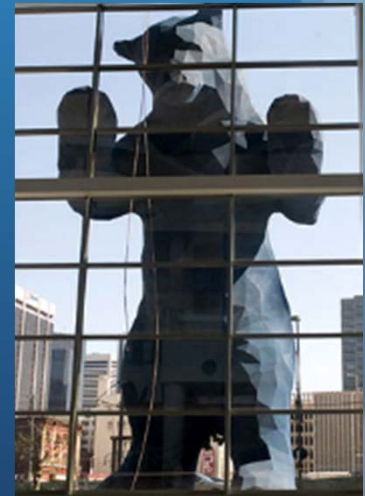
Literature Review: LI Individuals

Given that LI students experience difficulty producing narratives and explanations, one would expect them to have even greater difficulty with persuasion. However,…

Moran, et al. (2012) compared the persuasive speaking of 8 brain-injured adolescents from New Zealand to age-matched peers.

- ✓ Task: Offer an opinion on which is better, individual or team sports, and provide supporting reasons
- ✓ Results: The authors expected syntactic differences, but found none. Differing Measures: Mazing, Number of reasons, and tangential utterances
- ✓ Explanation for lack of syntactic differences
    - The authors speculate: Task expressing a preference was not motivating enough, that nothing real was at stake, i.e., *you say tomato, I say tomahto.*
    - We speculate: Task may not have challenged students sufficiently. Under CCSS, this is a lower-level persuasive task that doesn't lend itself to elaborated argumentation.

Clinical Experience with ECC

✓ Evaluating Communicative Competence (Simon, 1994) is a criterion-based assessment
✓ One of the 21 subtests asks students to express their opinion about pictured situations and to give reasons in support.

How do you feel about having to help at home by doing chores?

The boy wants to train his dog to do a trick. When should he give a treat: Before or after the dog does the trick?

✓ Clinical experience of second author with ECC: Most adolescent LI students had no problem taking a clear position, but needed considerable support in generating reasons, especially ones that benefitted others. Giving a reason to support on opposing view proved extremely difficult. Differing viewpoints were often labeled as "dumb" or "stupid."

Photos courtesy of Charlann S. Simon

Our Speaking Task

Students select an issue from:
- ✓ School
- ✓ Work or
- ✓ Community

Direct their argument for a change in policy toward an authority figure, with the examiner standing in for a:
- ✓ Principal
- ✓ Boss or
- ✓ Governmental Official (e.g., mayor, senator)

After writing notes (not sentences) on a planning sheet:
- ✓ Speak persuasively for several minutes
- ✓ Without interruption (i.e., a monologue, not a dialog)
- ✓ Prompted only by their notes + the examiner's

    "Is there anything else you can tell me?"

Mixing speaking and writing makes the task more authentic since this is how extended adult persuasion is structured.
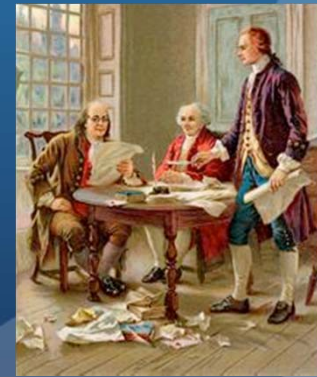
Researcher- vs. Student-Selected Issues

Based on our positive experience with allowing choice in the FGS task, we wanted to let students select their issue.

✓ Real Cost: Increased variability may complicate drawing conclusions.

✓ Offsetting Potential Gains:

- When allowed to talk about what they know and care about, children raise to the occasion and produce their best performance (Nippold, 2005, chess explanations).

- Allowing choice may also serve as a hedge against cultural or economic bias, e.g., students who have never had the opportunity to attend a circus are unlikely to know or care much about how circus animals are treated.

- Hot-button issues change over time. By allowing choice, we didn't have to guess which issues would hold enduring interest for adolescents.
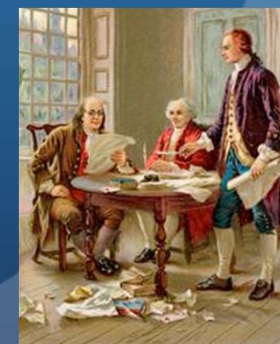
Suggested List of Issues

✓ Bit of a Surprise: In a pilot study, the majority of students, both TD and LI, struggled to come up with an issue.

✓ Therefore we developed a suggested topic list.
- Issues were drawn from school, work, and the community.
- Participating SLPs were asked to weigh in on which issues student would find the most compelling.
- Open-ended wording so that students can individualize their arguments:

Changing the time school starts in the morning

Instead of: **Starting school one hour later**

✓ Another place examiners can direct students to find issues:
The student handbook for his or her high school

Planning Sheet

I am talking to my _____ *i.e., principal, boss, government official*

What to Talk about When Trying to Persuade Someone

Points	What's Covered?	Notes
1. Issue Identification	What rule or situation do you want changed? What would you change it to?	
2. Supporting Reasons	What facts or values or evidence helps your side? Be sure to include how your change would help or benefit the listener or people the listener cares about.	

✓ Additional points to be covered: Counter Arguments, Response to Counter Arguments, Compromises (a.k.a., fallback position or Plan B), Conclusion
✓ Meant to be comprehensive and in alignment with the CCSS
✓ Conveys the expectation that student are to talk at length
✓ Modeled after the FGS planning sheet

Persuasive Scoring Scheme (PSS)

Recall that in our study of adolescent expository discourse (Heilmann & Malone, 2014), Discourse Organization was a key measure. This consisted of a rubric, the Expository Scoring Scheme (ESS), which was designed to capture the overall content and organization of a child's favorite game or FGS explanation. We created a similar rubric for persuasion.

But it's difficult to clearly display the entire PSS….

Persuasive Scoring Scheme (PSS)

Persuasive Scoring Scheme (PSS) Rubric

Guide for scoring: Use points as a guideline to determine level of proficiency for each characteristic. Not *all* points listed in each characteristic must be present when assigning score.

Characteristic	Proficient/Advanced (5)	Satisfactory/Adequate (3)	Minimal/Immature (1)
Issue Identification and Desired Change	• Existing rule or situation is clearly understood before supporting reasons are stated • Desired change is clearly stated	• Existing rule or situation can be discerned; may require shared knowledge • Desired change can be discerned	• Speaker launches into persuasion with no mention of existing rule or situation • Desired change is difficult to determine
Supporting Reasons	• Reason(s) are comprehensive; include detail • Benefit(s) to others are clearly understood	• One or more reasons are offered to support desired change • Benefit(s) to others are unclear or omitted	• Reason(s) are confusing or vague • Significant/obvious reason(s) are not stated • Reason(s) are not plausible; do not support change
Other Point of View (Counter Arguments)	• Other point(s) of view are clearly explained; include detail • Includes language to support or refute other point of view	• Other point(s) of view are acknowledged OR • Dismissive of other point(s) of view	• Other point(s) of view are unclear or omitted
Compromises	• Includes language to support or refute compromising	• Compromise(s) are acknowledged OR • Dismissive of compromising	• Compromises are unclear or omitted
Conclusion	• Desired change is clearly restated/summarized • Arguments are clearly restated/summarized • Concludes using language such as, "to conclude", "therefore", "and so", "in sum", etc. • First step(s) for change are mentioned	• Desired change is restated • One or more supporting reasons are restated • Ending is inferred and/or lacks transition to conclusion, e.g., "And that's all", "that's it", "I'm done"	• Summary statement(s) are omitted • Unclear to listener that the persuasion task is completed
Cohesion	• Points are fully covered before moving on to another • Transitions between points are smooth/clear using mature language • Referents are clear • Listener can easily follow the argument	• Point are covered, but lack organization • Transitions between points are acceptable • Referencing is adequate • Listener can follow the argument with some effort	• Points are not fully covered before moving onto another • Abrupt transitions between points • Referents are unclear, hard to follow • Argument is difficult to follow
Effectiveness	• Argument is extremely compelling • Argument is entirely plausible • Argument is well stated • Mature language is used • Minimal errors of syntax/form • Supported points well • Speaker's delivery is passionate • Speaker engages listener	• Argument is compelling • Argument is plausible • Argument requires little or no clarification • Acceptable syntax/form • Speaker's delivery is clear; not necessarily passionate • Effort to persuade is evident • Speaker makes some attempt to engage listener	• Argument is minimally or not compelling • Argument is not plausible • Language is unclear • Errors of syntax/form may be prevalent • Speaker's delivery lacks effort; not passionate • Speaker makes no attempt to engage listener • Speaker uses inappropriate/immature tone

Scoring: Each characteristic receives a scaled score 0-5. Proficient/Advanced = 5, Satisfactory/Adequate = 3, Minimal/Immature = 1. Scores in between (e.g., 2, 4) are undefined; use judgment. Not all points listed in each characteristic must be present when assigning score. Use points as a guideline to determine level of proficiency for each characteristic.
Add the scores for the six characteristics to yield a composite score. Highest possible score = 35.
A score of 0 is given for student errors such as not completing the task when prompted, refusing the task, unintelligible production(s), abandoned utterances leaving characteristics incomplete.
A score of NA (non-applicable) is given for mechanical/examiner/operator errors e.g., interference from background noise, issues with recording (cut-offs, interruptions), examiner not following protocol, examiner interrupting student.

Section of PSS

Characteristic	Proficient/Advanced (5)
Issue Identification and Desired Change	• Existing rule or situation is clearly understood before supporting reasons are stated • Desired change is clearly stated
Supporting Reasons	• Reason(s) are comprehensive; include detail • Benefit(s) to others are clearly understood
Other Point of View (Counter Arguments)	• Other point(s) of view are clearly explained; include detail • Includes language to support or refute other point of view

7 Characteristics, each rated on a 5-point scale:
- 1 = Minimal/ Immature; 3 = Satisfactory/Adequate, 5 = Proficient/Advanced
- Most characteristics track the Planning Sheet
- Others not shown:
    Compromises, Conclusions, Cohesion, and Effectiveness
- Maximum Total Points: 35

Sample of a SALT Transcript

Subject: TD 15-year old Asian male with high academic achievement

C So there should be free wireless internet access
in public space/s in the city because it would make
people/z lives easier [SI-2].
C And people could do their job/s easier as well
[SI-1].
C So if you/'re out of the work place and you are
do/ing something else, (you could easily just
like[FP]) if you get an email or something or if you
have something to do that require/3s internet
access, you could do it anywhere in the city in
public space/s [SI-5].
C And it/'d be easier [SI-1].
C And it would also help people who can/'t afford to
have thing/s like a smart_phone that would have
(like[FP]) a service provider for email [SI-3].

Key: ( ) = mazes; SI = Finite clauses per utterance; FP = Filled pause

Comments on TD Sample

This TD student:

- ✓ Clearly presents his issue and the change he would like to see before offering reasons

- ✓ Gives multiple reasons to justify the change

- ✓ Cites benefits to others, not just himself

- ✓ Produces complex sentences with several levels of subordination

- ✓ Expresses complex ideas with a minimal mazing

- ✓ Maintains a formal tone throughout.

Preview of Our Case Study, Jake

Jake is a 16-year old with an identified LI—more details later

```
C (Uh) I/'m do/ing (the uh like[FP]) paying for
Wi[EW:Wifi] for city/s because it/'s so annoying to
pay for it [SI-2].
C So people are pay/ing (t*) ton/s of phone bill/s
just for data that they use (like[FP]) every day
instead of using Wifi that barely cost/3s you
anything [SI-3].
C And it cost/3s you (like[FP]) half of your
(like[FP]) income {laughs} because it cost/3s you
(like[FP]) a ton of money [SI-2].
C And then (I would get I/'d put) I/'d put (Wifi
like[FP]) Wifi system thing/s everywhere that
(like[FP]) reach as far as the city [SI-2].
C (And they can go on like[FP] your like[FP]) so
they reach everywhere [SI-1].
C So *to get your phone, it/'s really easy [SI-1].
C It/'s really fast [SI-1].
```

Key: EW: Error at the word level; FP = Filled pause; { } = Comments

Comments on Jake's Sample

This LI student:

✓ Mentions the issue, but doesn't say what change he would like to see until further into his argument

✓ Gives one major reason to justify the change and restates it rather than adding other reasons

✓ Cites benefits only to himself

✓ Produces complex sentences with one level of subordination

✓ Expresses his ideas with a high degree of mazing

✓ Maintains an informal tone, even though his argument was addressed to his city's mayor.

Research Questions

✓ Can a functional persuasive speaking task elicit sufficient language from TD high school students to create a database of benchmark linguistic measures?

✓ Which, if any, of these measures are significantly affected by:

- Gender

- Issue Setting: School, Work, Community

- Issue Source: From a suggested list or self-generated

- Grade: 9th-12th

- Country: United States vs. Australia?

✓ Are the persuasive measures substantially dissimilar from those generated from expository language sampling?

✓ When a student with an identified LI is given the same speaking task, does his/her performance differ substantially from his TD peers?

Eligibility, Recruitment, Elicitation, & Transcription

Informed consent forms were mailed to the homes of all eligible students.

Students were eligible is they:
- ✓ Were enrolled in Grades 9 through 12
- ✓ Did not currently receive special education services
- ✓ Did not currently receive instruction for learning English as a second language

As an incentive to participate, students were offered a $10 gift card for a nearby restaurant or retail store.

Even with the incentive, the return rate for the consent forms was low across school districts, ranging from 3 to 12%.

For students who did consent, full demographic data on them was obtained from school records, allowing for a representative group of subjects.

School-based SLPs elicited and recorded samples.
They forwarded the digital audio files to SALT Software, where they were transcribed and coded according to SALT conventions (Miller, et al., 2011).

Participant Demographics

Racial/Ethnic Group	2010 U.S. Census (%)	Wisconsin Subjects (%)
White	64	62
African-American	13	17
Latino	16	10
Asian	4	7
Other	3	4

Participant Demographics in Detail

Participants by gender
- Male: 51%
- Female: 49%

Participants by grade
- 9th, $N = 30$
- 10th, $N = 26$
- 11th, $N = 26$
- 12th, $N = 29$
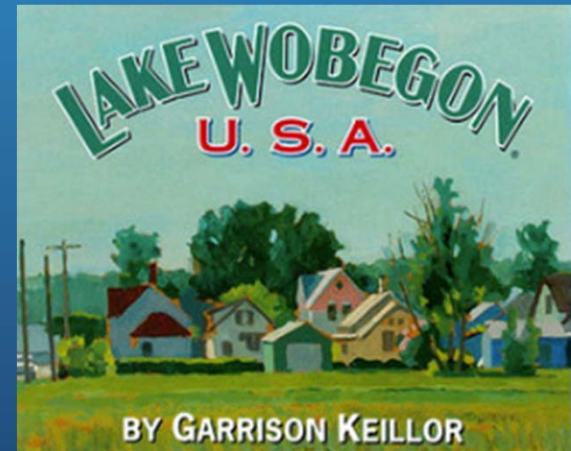
Free and Reduced Lunch Status
- Qualified: 25%
- National Qualification rate: 48%

Academic Achievement based on cumulative GPA
- High (> 3.0): 72%
- Medium (2.0 – 2.9): 25%
- Low (< 2.0): 4%

LAKE WOBEGON U.S.A.
BY GARRISON KEILLOR

Why so many high achievers?
- Self-selection: They are knowledgeable about and interested in issues
- Grade inflation: **The Lake Wobegone Effect**—Every child above average

Issues Selected

Setting
- School: 68%
- Community: 30%
- Work: 2%

Most students (67%) chose from the list of suggested topics

Popular Topics – Drawn from suggested list
- School start time ($n = 18$)
- Increasing the minimum wage ($n = 8$)
- Foreign language requirement ($n = 6$)
- Dress code ($n = 6$)

Popular Topic – Student selected: Same-sex marriage (n = 6)
One explanation: This issue was in the news when the samples were collected since the U.S. Supreme Court decision legalizing same-sex marriage had yet to be decided.

Anecdotal Feedback from SLPs

✓ The task took approximately 20 minutes, with the planning stage taking more time than the actual speaking.

✓ Students seemed engaged and motivated to do their best.

✓ One SLP reported that several subjects offered to turn down the $10 gift certificate because they had enjoyed the activities so much. (The SLP insisted they take it.)

Key Measures

Major dimensions captured in adolescent expository discourse (Heilmann & Malone, 2014)

- Length/Content: Total Utterances, Discourse Organization

- Syntactic complexity: Mean Length of Utterance

- Lexical Diversity: Number of Different Words (based on 150 words)

- Discourse Difficulties: Mazes; Errors & Omissions

Did setting or source of the issues matter?

✓ Choice of setting had no significant effect on the language sample measures

- $p = .15 - .80$
- $eta^2 = <.01 - .03$

✓ Source of issue (provided vs. self-selected) had no significant effect on language sample measures

- $p = .07 - .62$
- $eta^2 = <.01 - .03$
- Only Total Utterances approached significance ($p = .07$)
  - From suggest list: 31 utterances
  - Self-selected: 37 utterances

✓ Because there were no significant differences, we combined all samples into a single database.

Differences Across Gender

Significant differences observed for:

	Mazes	Errors & Omissions
Males	11.3%	8.6
Females	6.8%	6.1
p	<.001	.04
eta^2	.18	.03

No significant differences for remaining measures

Grade-Related Changes in Persuasion

Grade	Total Utts	NDW (150 words)	MLU-W (C-Units)	Mazes	Errors/ Omission	PSS
9	30	82	15.8	9.1%	6.1	20
10	39	81	15.6	10.8%	11.2	21
11	31	84	17.2	8.0%	5.9	22
12	34	83	16.8	8.9%	7.0	21
p	.52	.33	.20	.03	.70	.91
eta^2	.02	.03	.05	.11	.01	.01

Modest differences across grades

Sophomores as "wise fools": More to say, but also more mazing and errors

New Expository Data

- ✓ Previous expository data collected for "Tweens" (5th, 6th, 7th, 9th grade; Heilmann & Malone, 2014)

- ✓ Additional data collected for 9th - 12th grade students
  - Expanded expository database through high school
  - Allowed comparison of persuasion to expository discourse

Comparing Persuasion to Exposition

Context	Total Utts	NDW (150 Words)	MLU (words)	Mazes	Errors/ Omissions*
Persuasion	33	78	16.3	9.2%	7.8
Expository	66	83	12.8	9.0%	10.6
p	<.001	<.001	<.001	.78	.02
eta^2	.22	.12	.27	<.01	.03

* Estimated means from ANCOVA controlling for length.

Compared to the expository samples, the persuasive ones were shorter in length, but contained greater syntactic and semantic complexity.

Australian Data for Persuasion

- ✓ Persuasive language samples were collected from children in Queensland, Australia in grades 8, 10, and 12.

- ✓ Same elicitation protocol was used.

- ✓ Goals were to test equivalence and expand database.

Australia: Subject Demographics

Country of Origin	% of sample
Australian	73
English/Indian	5
European	3
Indigenous	5
Not reported	14

Gender: 67% male, 33% female

Mix of urban and rural school districts

Differences Between the U.S. and Australia Controlling for Age

	United States	Australia	p	eta^2
Total Utterances	32.5 (17.2)	22.2 (12.4)	<.001	.10*
MLU	16.4 (3.4)	16.2 (4.1)	.7	<.001
NDW**	158.9 (58.5)	158.8 (45.4)	.98	<.001
Mazes	9.1% (5.3%)	8.3% (4.8%)	.28	.01
Errors & Omissions**	6.6 (6.9)	6.7 (4.1)	.89	<.001
PSS	20.9 (3.6)	19.2 (4.0)	.01	.03

*Clinically significant at p >.04 (Ferguson, 2009)
**Controlled for length using NTW

Further Exploration of Length

Grades	Combined total Utterances (M(SD))	Total Utts. U.S. Only
10 AU and 9 U.S.	26 (15) $n = 57$	30 (16) $n=35$
12 AU and 11 U.S.	28 (17) $n = 40$	31 (16) $n=24$

Note that Australian students start school a year earlier than their U.S. counterparts.

We concluded that combining Australian and U.S. databases would have minimal clinical impact.

Case Study: Jake

Background
- Part of a larger study to collect persuasive and expository language samples from high school students with an identified LI.
- White male, age 16, with average academic performance.
- Also identified with Other Health Impairment due to ADHD.

Major concerns according to his SLP:
Difficulty with organization, attention/focus, reading, writing, and insight into his deficits.

Area of strength: Social/Pragmatic language.

Treatment
- Provide support Jake's general education classes, particular English.
- Answer how and why questions.
- Use graphic organizers to improve his thought organization
- Using the Writing Express program to improve the complexity of his sentence structure.

Case Study:
Additional Background from Jake's SLP

- Persuasion will be directly targeted he takes a required speech class next year.

- Example of poor insight into his deficits: When he finished the persuasion task, he looked at me and said he thought he did awesome.

- This deficit area impacts his ability to recognize his difficulties and seek or accept assistance with academic tasks.

- I have been teaching his special education teacher how to do insight training, especially on major tests and projects.

Case Study: Standardized Testing

2012

CELF-4 (results presented as standard scores)

Core Language = 76

Receptive Language = 76

Expressive Language = 77

Language Content = 74

Language Memory = 72

Working Memory—Not Assessed

2015

CELF-5 Sentence Repetition Subtest = 5 (< -1 S.D.)
(This subtest was administered as part of our LI Study. It is meant to supplement the prior school district testing that qualified students as having a LI)

Case Study: SALT Measures for Persuasion

Language Measure	Jake		Persuasive Database
	Score	+/- S.D.	Mean
Total Utterances	37	-0.20	41.24
MLU	10.97	-1.53	15.60
NDW	130	-0.69	137.81
Mazes	21%	+1.51	10.56
PSS	14	-1.20	21.08

More than 1 S.D. from the database mean: MLU, Mazes, and PSS.

Database Subjects: 25 students,10 females and 15 males, within 6 months of Jake's age.

The basis of comparison: Entire transcripts, except for NDW, which was computed on 340 words, the length of Jake's sample.

Case Study: Errors and Omissions

	Jake		Persuasive Databse
Language Measure	Score	+/- S.D.	Mean
Omitted Words	2	-0.12	2.52
Omitted Bound Morphemes	0	-0.52	0.28
Word-Level Errors	5	0.03	4.92
Utterance-Level Errors	2	0.56	0.92

All types of errors were within normal limits.

However, results of Jake's expository sample told a different story….

Case Study: Persuasion vs. Exposition

Problematic measures in both persuasion and exposition (explaining how to play volleyball):

- MLU below average
- Mazing above average
- ESS (content and organizational rubric) below average

New measures of concern in the expository sample:

- NDW below average
- Errors of all types were above average
- Maybe these differences are due to increased output: 102 utterances vs. 37 for the persuasive sample, thereby giving more opportunity for semantic and syntactic weaknesses to be exposed

Moral: Collect samples in more than one context.

Discussion

- ✓ High levels of persuasive discourse are expected of high school students.

- ✓ Skill at persuasion is critical for success in college, work, social relationships, and civic life.

- ✓ Students were motivated to complete the persuasive task and produced sophisticated language and thoughtful arguments.

- ✓ The persuasive protocol elicited reliable data. Modest differences were seen across settings, issue source, gender, grades, and country.

- ✓ Compared to expository samples from the same subjects, the persuasive samples were shorter length, but featured more complex language.

- ✓ A case study of a high student with LI documented differences from TD subjects on key measures in both persuasive and expository contexts.

- ✓ Having normative benchmarks will assist SLPs with describing LI students' relative strengths and weaknesses, leading to functional treatment objectives.

Limitations and Future Directions

Underway

✓ Collaborating with the San Diego Unified School District to add samples TD high school students to the persuasive and expository databases.

✓ Collecting samples from students with LI in Wisconsin and San Diego

Down the Road

✓ Expand developmental levels, e.g., middle school students, adults

✓ Compare spoken and written persuasion

✓ Persuasion with other Listeners/Readers, e.g., friends, parents

✓ Other tasks, e.g., ethical reasoning using the moral dilemmas of Kohlberg (1981)

✓ Other linguistic measures, e.g., non-finite clauses, metacognitive verbs

✓ Receptive Persuasion: How well do students understand TV commercials and political debates? (Recall the high expectations in the CCSS for Reading.)

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