

Background

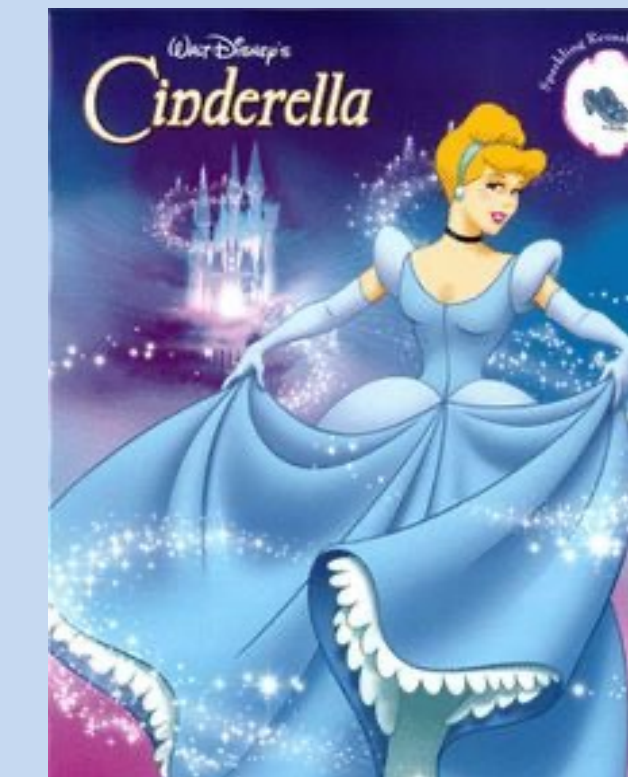
- People with very mild or latent aphasia (PwLA) often experience communication challenges despite scoring above the cut-off on traditional aphasia assessments.
 - Difficulties in communication often leads to reduced social participation, low self-confidence, and difficulties returning to work amongst these individuals (Cavanaugh & Haley, 2020).
- Due to their high-level language deficits, PwLA often do not meet the criteria for aphasia services, resulting in a lack of essential treatment (Richardson et al., 2021).
- Discourse analysis has emerged an important tool in effectively identifying language impairments in latent aphasia and differentiating between healthy controls and other aphasia types (e.g., DeDe & Salis, 2020; Fromm et al., 2013).
 - PwLA show difficulty with discourse productivity and informativeness, slower speech rates, mean length of utterances (MLU), and fewer main concepts compared to non-aphasic controls (Dalton & Richardson, 2015; Fromm et al., 2017).
 - PwLA may demonstrate extralinguistic cognitive deficits (Salis & DeDe, 2022; Silkes et al., 2021).
- Such cognitive-linguistic impairments can disrupt the overall meaning and connectedness of discourse during social conversations.
- To date, our understanding of **discourse coherence** in latent aphasia remains limited.
 - Producing coherent discourse is fundamental to effective everyday communication – it facilitates understanding, maintains engagements, and supports overall interactional success.

Specific Aims

- To assess discourse coherence in individuals whose language was affected by stroke, but they performed within the normal range of performance on the Western Aphasia Battery (WAB-R; Kertesz, 2007).
- To compare performances with anomic aphasia and non-aphasic healthy controls (HC).

Methods

- Transcripts of Cinderella story narratives retrieved from AphasiaBank (MacWhinney et al., 2011).
- Computerized Language Analysis (CLAN) – Transcripts analyzed for productivity, fluency, lexical features, and grammatical complexity.
- Coherence - Linnik et al.'s (2022) rating rubric



Variable mean (SD)	Latent Aphasia (n = 38)	Anomic Aphasia (n = 38)	Healthy controls (n = 38)	Group Comparison Statistic
Age	60.42 (15.57)	61 (14.27)	61.36 (15.35)	$F(2,111) = .003, p = .997$
Education	15.83 (3.02)	14.23 (2.09)	15.66 (2.05)	$F(2,111) = .484, p = .617$
WAB-AQ *	96.50 (1.80)	85.67 (7.18)	-	$t(74) = 9.012, p < .001$

Table 2. Evaluation for the four selected aspects of coherence.

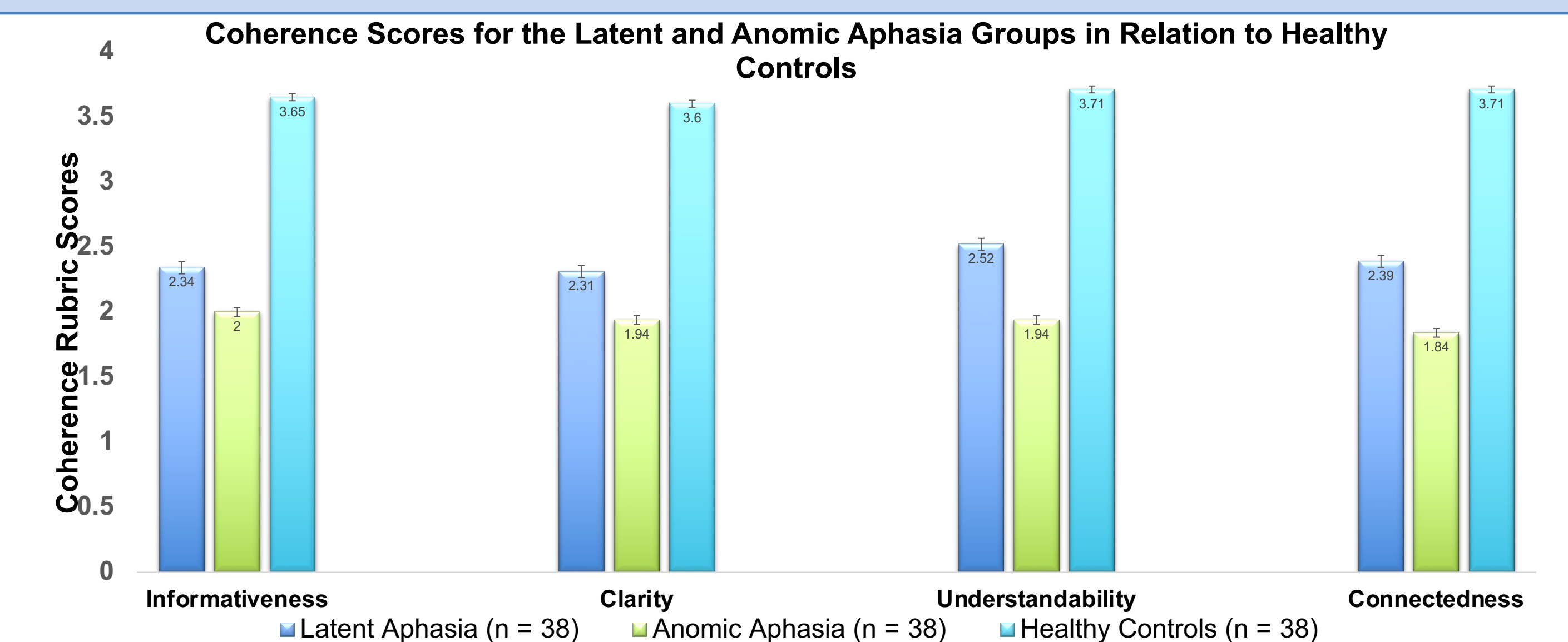
Aspect	Description
Informativeness.	Informativeness refers to the amount of relevant information content in the retold story.
Informative	(4) All the essential information is conveyed (3) Most of the essential information is conveyed
Uninformative	(2) Some of the essential information is conveyed; there are omissions that affect the understanding of the retold story (1) The information provided in the retelling is incomplete, a lot of information is missing
Clarity.	The term clarity is used to describe the overall meaningfulness of discourse achieved through the appropriateness of its elements with respect to the overall topic of the story and narrative structure. Clarity is the degree to which the story as a whole, hangs together or makes sense.
Clear	(4) The story is well structured, every episode of the story is appropriately placed, the narrative is the speaker does not deviate from the storyline too much (3) The story is structured well; there are occasional comments and deviations from the storyline, but they do not disrupt the sequence of elements/episodes of the story
Unclear	(2) The storyline is hard to follow because of multiple deviations or omissions from the storyline or confused order of episodes (1) The retelling is hard or impossible to follow because the storyline is confused and/or there were serious omissions
Understandability.	Understandability reflects how well the meaning intended by the speaker could be perceived and/or interpreted by the listener. This is not a measure of information content, although omitted information may influence the understandability of a retelling.
Understandable	(4) It is easy to understand the plot of the story, I understood everything well (3) It is possible to understand the overall plot of the story, although some parts are somewhat fuzzy
Not understandable	(2) It is hard to understand much of the story from the retelling; often it is not clear what the speaker is talking about (1) It is almost impossible to understand anything from the retelling
Connectedness.	Connectedness touches upon the relationship between consecutive elements of the retelling and appropriate organization of its parts into a unified whole through the use of semantic and pragmatic relations.
Connected	(4) Transitions between sentences and larger parts of the story are smooth (3) Transitions between parts of the story are mostly smooth, although some transitions between episodes and within them are missing or too abrupt
Disconnected	(2) The flow of the story is often disrupted, many transitions between sentences and larger parts of the story are missing or too abrupt (1) The retelling is "chunky", telegraphic, it is a disconnected description of separate episodes; sometimes it is hard to tell whether the speaker is continuing with the same story

- Group differences analyzed using one-way analysis of variance (ANOVA) with post-hoc testing using Tukey's HSD test.
- Manually scored variables demonstrated good-to-excellent inter-rater reliability (ICC range = .825-.947; Koo & Li, 2016).

Results

Variable mean (SD)	Latent Aphasia (n = 38)	Anomic Aphasia (n = 38)	Healthy controls (n = 38)	Group Comparison Statistic
Discourse Analysis Results – Microlinguistic Variables				
Speech rate (Words/min) *	97.67 (30.00)	69.19 (31.46)	158.87 (32.21)	$F(2,111) = 81.761, p < .001$
Mean Length of Utterance *	8.79 (1.56)	6.99 (2.15)	9.90 (2.07)	$F(2,111) = 21.641, p < .001$
Proportion of nouns	16.93 (3.47)	18.09 (7.38)	17.73 (2.67)	$F(2,111) = .547, p = .580$
Proportion of verbs*	17.62 (2.09)	16.38 (3.13)	17.72 (1.29)	$F(2,111) = 4.034, p = .020$
Propositional density*	0.47 (0.03)	0.46 (0.06)	0.47 (0.04)	$F(2,111) = 5.279, p = .006$

- Significant group differences on microlinguistic measures (all $p \leq .006$)
- PwLA did not differ from HC on all microlinguistic variables.
- PwLA consistently showed significantly lower scores compared to HC on all four domains of the coherence rubric.
- WAB-R AQ did not show any correlation with coherence scores in the latent aphasia group but did for the anomic group.



Discussion and Conclusion

- Narrative coherence impairments are common in latent aphasia.
- Linnik et al. (2022)'s rating-based assessment effectively captured coherence impairments in latent aphasia, whereas basic linguistic variables were less consistent in distinguishing between the groups.
- A comprehensive approach that incorporates both micro- and macro-linguistic analysis is necessary to enhance the diagnostic sensitivity of language assessments for latent aphasia.

Select References

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Acknowledgement

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