

Which linguistic aspects influence listeners' comprehensibility of non-native speech

What this research was about and why it is important

The researchers investigated which aspects of non-native speech were most strongly associated with listeners' rating decisions of foreign language *comprehensibility* (listeners' perceptions of how easily they understand non-native speech). Based on these results, they suggested guidelines for a foreign language comprehensibility scale with different criteria for low, intermediate, and high comprehensibility levels.

What the researchers did

- In the first stage, 60 native English speakers aged 19-25 with no second language (L2) teaching experience or specialized language training rated the speech of 40 French learners of English (aged 28-61) for comprehensibility.
- The learners told a picture-based story in English which was analysed for 19 linguistic measures based on previous research, including **six measures of pronunciation** (e.g. number of word stress errors), **six measures of fluency** (e.g. number of all immediately repeated and self-corrected words), **one grammatical accuracy measure** (number of words with at least one grammatical error), **three vocabulary measures** (e.g. number of incorrectly used words and expressions), and **three discourse-level measures** (e.g. number of adverbials used as cohesive devices).
- Then, the 60 raters listened to an excerpt from the beginning of each story and scored them for comprehensibility on a 9-point numerical scale (1 = hard to understand, 9 = easy to understand).
- In the second stage, three native English-speaking English as second language (ESL) teachers with 10-12 years of classroom experience were consulted about their impressions of the speech and the influences on their ratings in individual 2 hr sessions. They were asked to score each speech sample on the 9-point comprehensibility scale and to write below each scale which aspects of the speech they focused on when scoring.

What the researchers found

- Of all 19 linguistic aspects, only pitch range (a pronunciation measure) showed no relationship with comprehensibility.
- The ESL teachers cited grammar most frequently as factoring into their comprehensibility scoring, followed by vocabulary and fluency. By combining the statistical analyses with the ESL teachers' reports, the researchers retained five linguistic aspects in their preliminary guidelines for the design of an L2 English comprehensibility scale:
 - **number of word stress errors,**
 - **total number of words produced,**
 - **mean number of syllables produced between pauses,**
 - **number of storytelling elements used,**
 - **grammatical accuracy.**
- Then, they examined whether these linguistic aspects could distinguish between the 40 L2 French speakers rated at low-, intermediate-, and high- comprehensibility levels. Medium-to-strong effect sizes were generated for all measures, with word stress errors yielding the largest effect size. Researchers found that fluency and vocabulary aspects may describe low- comprehensibility level speakers, whereas few grammatical errors and a large number of storytelling elements may describe high-comprehensibility level speakers (see table on the right).

Table 6. Suggested guidelines for L2 comprehensibility scale development

Comprehensibility	The L2 speaker
High	<ul style="list-style-type: none">• Produces fluent stretches of speech; generally only pauses or hesitates at the end of the clause• Provides sufficient vocabulary to set the scene and propel the story plot forward; lexical errors, if present, are not distracting• Assigns word stress correctly in most instances• Produces grammatical errors infrequently; errors do not detract from the overall message
Intermediate	<ul style="list-style-type: none">• Produces some fluent stretches of speech; occasionally pauses or hesitates in the middle of the clause• Experiences occasional lapses in vocabulary, although may roughly convey the setting or main plot of the story; lexical errors are prevalent• Is inconsistent in word stress placement• Produces some grammatical errors that may detract from the overall message
Low	<ul style="list-style-type: none">• Produces dysfluent stretches of speech; frequently pauses or hesitates between lexical items• Experiences frequent lapses in vocabulary that make the storyline unelaborated or indecipherable; high proportion of lexical errors, including L1 lexical influences• Frequently misplaces word stress• Produces frequent grammatical errors that are likely to detract from the overall message

Things to consider

Some parts of the scale descriptors could be specific to French learners of English, i.e. are not generalizable to learners from other first language backgrounds, whereas others are task specific (e.g. those parts that refer to the story).

Materials available at www.iris-database.org

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