What makes listening difficult?
Factors affecting second language listening comprehension

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Executive Summary

PURPOSE
To establish what is currently known about factors that affect foreign language listening comprehension, with a focus on characteristics of the listener, passage, and testing conditions.

CONCLUSIONS—Research on second language (L2) listening comprehension strongly supports the importance of a number of factors; for example, a listener’s working memory capacity or the density of information in a passage. Much of the research, however, reports weak or inconclusive results, leaving the importance of many factors and interactions among factors unresolved and in need of further investigation.

RELEVANCE—Identifying the factors that affect L2 listening comprehension will help Defense Language Institute Proficiency Test (DLPT) designers anticipate how qualities of created materials and selected authentic materials will impact listening comprehension.

Although the available research on L2 listening comprehension is limited, CASL’s literature review identified several factors that affect listening comprehension. These factors are summarized below and in Tables 1, 2, and 3.

Characteristics of the listener
Understanding a foreign language taps several general cognitive abilities. For example, listeners with greater working memory capacity—that is, those who are most efficient at attending to, temporarily storing, and processing incoming information—understand more of what they hear when they are listening to their non-native language. Further, listeners who effectively use metacognitive strategies—that is, those who are aware of and use effective strategies, such as avoiding mental translation—demonstrate better L2 listening comprehension.

In addition to these general cognitive abilities, a number of factors pertaining to experience with the L2 influence listening skill. These factors include the amount of prior exposure to the language, familiarity with and an ability to understand the non-native language’s phonology, vocabulary size, and background knowledge about the topic, text, structure, schema, and culture.

Familiarity with the L2 changes the extent to which the L2 listener uses top-down or bottom-up strategies in listening. For example, expert listeners...
use both types of strategies: They are able to accurately make sense of the speech signal (bottom-up information) and integrate this information with background knowledge (top-down information). By contrast, non-expert listeners attempt, often unsuccessfully, to use background knowledge to compensate for failure to understand speech sounds.5, 6 Vocabulary size also impacts the extent to which L2 listeners will comprehend a spoken message, but this effect of vocabulary may be related to other more general qualities of listeners, such as their experience with the L2.7

Listeners’ anxiety can also impact their ability to understand what has been said. If a listener is anxious or in some other way distracted and unable to pay attention, it will be more difficult to accurately determine what was said.

2 Characteristics of the passage

Studies directly examining the effects of passage length on L2 listening comprehension find little evidence that this factor alone affects comprehension difficulty.9 However, these studies have often explored a limited range of lengths9 or have confounded length with other factors.10 Information density (i.e., how closely packed information is in the passage) and redundancy (i.e., the extent to which passage information is repeated), which are related to passage length, have more consistent effects. Information density increases listening difficulty consistently across studies,11 even when this factor is measured using different methods.12 Redundancy improves comprehension, but the effect depends both on the proficiency of the listener and the type of redundancy (e.g., exact repetition, paraphrase).13, 14 Passage complexity also may affect L2 listening comprehension. A higher number of negatives15 and the presence of infrequent vocabulary16 may increase difficulty. Further, simplifying the syntax of a passage does not consistently aid L2 listening comprehension.17 Indirect passages, which include more implied information, can also be more difficult for L2 listeners to comprehend,18 and the ability to cope with this type of information improves with L2 proficiency.19 Concreteness, or the extent to which a passage refers to concrete objects or entities, has rarely been explored as a factor affecting L2

<table>
<thead>
<tr>
<th>Table 1. Effects of listener characteristics on L2 listening comprehension</th>
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<tr>
<td><strong>Working memory</strong></td>
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<td><strong>Metacognitive strategies</strong></td>
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<td><strong>L2 proficiency and experience</strong></td>
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<td><strong>Anxiety</strong></td>
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Table 2. Effects of passage characteristics on L2 listening comprehension

<table>
<thead>
<tr>
<th>Length</th>
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<tr>
<td>• Overall length—Longer length increases listening difficulty, but the effect is weak and inconsistent across studies.</td>
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<tr>
<td>• Information density—Passages packed with more ideas are more difficult to comprehend.</td>
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<tr>
<td>• Redundancy—Repetition of information consistently improves comprehension, but whether the listener benefits depends on the type of redundancy (e.g., exact repetition, paraphrase) and listener proficiency.</td>
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<tr>
<th>Complexity</th>
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<tr>
<td>• Syntactic features—Simplifying sentence structure does not consistently improve comprehension. Negatives and infrequent vocabulary have a detrimental impact.</td>
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<tr>
<td>• Directness and concreteness—Passages with implied meaning can be more difficult to understand. Research in reading comprehension suggests that texts with more concrete objects or entities may be easier to comprehend, but little research has examined this factor in L2 listening.</td>
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<tr>
<td>• Pragmatic information—The inclusion of L2 pragmatic constructs such as idioms and culturally specific vocabulary decreases comprehension.</td>
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<th>Organization</th>
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<tr>
<td>• Orality—Passages with higher orality—that is, ones more like unscripted conversations—have greater redundancy, more disfluencies, and simpler syntax. They are easier to understand than passages with less orality.</td>
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<td>• Coherence—Overall coherence of a passage seems to have little effect, but only a few studies have examined its effects. Further, coherence may be difficult to define and measure objectively.</td>
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<td>• Discourse markers—Words and phrases that signal the relationship between adjacent propositions and the overall structure of the passage improve comprehension. However, this effect may depend on the type of marker.</td>
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<td>• Position of relevant information—Information is most easily recalled when it occurs near the beginning or at the end of a passage.</td>
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<td>• Speaker accent—Familiar accents are easier to understand than unfamiliar accents.</td>
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<td>• Hesitations and pauses—Disfluencies, like hesitations and pauses, generally aid comprehension, especially for more proficient listeners.</td>
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<tr>
<td>• Noise and distortion—The presence of noise or distortion in the speech signal interferes with comprehension.</td>
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<td>• Speech rate—Fast speech rates can hurt comprehension, but slower speech rates do not necessarily help. L2 listeners may mistakenly attribute difficulties caused by other factors to a too-fast speech rate.</td>
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WHAT MAKES LISTENING DIFFICULT?

listening comprehension, though it does affect L2 reading comprehension. Finally, L2 listeners have a harder time understanding passages that contain culturally specific words and idioms.

Several dimensions of passage organization affect comprehension, including orality—that is, the extent to which passages are similar to spoken language. Passages with higher orality have simpler syntax, greater redundancy, more hesitation markers (e.g., *um* and *ah*), and more pauses; these types of passages are easier for L2 listeners to comprehend.

Coherence is an additional dimension that can be characterized as the appearance of logicality in a passage or the extent to which ideas introduced at the beginning of a passage are carried through until the end. Research examining the effect of coherence on L2 listening comprehension is sparse and generally inconclusive, and there are potential issues with defining this factor in a way that can be measured objectively.

Discourse markers, which help to establish relationships between adjacent utterances (e.g., *yet*—a micro-marker) and the overall structure of the passage (e.g., *the first point is*—a macro-marker), improve L2 listening comprehension. That said, there is some evidence that macro-markers make a passage more comprehensible, while micro-markers do not consistently help L2 listeners.

Another feature of organization that affects listening comprehension is the position of the information that is necessary to answer a test question. Information toward the beginning or at the end of a passage is more easily recalled than information from the middle of the passage.

Several auditory features impact L2 comprehension, including the familiarity of the speaker’s accent. Accent familiarity affects passage comprehension for both first language (L1) and L2 listeners, though more so for L2 listeners. The level of experience with an accent required to completely remove the detrimental effect seems to be extensive, though L1 listeners show partial adaptation after brief exposure. Disfluencies such as hesitations and pauses aid L2 listening comprehension in most studies examining these factors. Hesitations like *um* and pauses give L2 listeners additional processing time and act as cues about the speaker’s upcoming utterances. Further, some evidence shows that hesitations that occur in the L2 (e.g., *um, er, and ah* in American English) must be learned before they can be useful in listening comprehension, so listeners of different proficiency levels may benefit differentially from hesitations.

Noise or distortion in the audio signal interferes with listening comprehension for L1 and L2 listeners, though the effect is larger for L2 listeners. For L2 listeners, noise that most closely resembles the signal (e.g., babble noise when listening to speech) presents the greatest challenge for listeners. Other types of distortion (e.g., white noise, filtering out high-frequency information) generally have a smaller impact on the comprehension of L2 listeners, even advanced listeners. However, some research suggests that L2 listeners will tend to feel the speech rate of aural materials is too fast when comprehension difficulty is caused by factors unrelated to speech rate. Further, while a faster speech rate may be detrimental to L2 listening comprehension, a slower speech rate is not necessarily beneficial or even preferred by listeners.

### 3 Characteristics of the testing conditions

Research shows that imposing time limits makes cognitive tasks more difficult. However, very little research has directly examined the effect of time limits on performance in L2 listening comprehension testing, though imposing time limits on any test is likely to affect response behavior and test-taking strategies.

Performance on L2 listening tests may be unaffected by increasing time limits if the examinee has the option of pausing or replaying the passage. The improvements may be greater for lower-proficiency listeners than higher-proficiency listeners, but only if they have the lexical and syntactic knowledge needed to comprehend the passage. When listeners are given control over the number and timing of hearings of the passage, they will choose to replay the passage more often when the passage is difficult due to factors like speech rate.

For L1 listeners, note-taking is an effortful activity that introduces time pressure due to the difference between speaking rate and writing rate, and for L2 listeners, note-taking is even more effortful.

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<th>Table 3. Effects of testing conditions on L2 listening comprehension</th>
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<td><strong>Time limits</strong></td>
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<td><strong>Multiple hearings</strong></td>
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<td><strong>Note-taking</strong></td>
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more cognitively effortful.\textsuperscript{54} Note-taking can be damaging to L2 listening comprehension when listeners are urged to take notes.\textsuperscript{55} Other factors that impact difficulty (e.g., speech rate) affect whether taking notes in the L2 benefits comprehension and recall.\textsuperscript{56} Overall, the literature indicates that if L2 listeners are able to successfully employ a metacognitive strategy for determining when to take notes and when not to take notes, note-taking can benefit listening comprehension.

The effects of item type (e.g., multiple-choice, free response) and the task associated with listening (e.g., comprehension versus transcription) were not covered in the literature review.

ENDNOTES

For the full citations, see the technical details section of this report.

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