INTRODUCTION TO SPEECH RATE, ARTICULATION, AND TRANSLATION QUALITY IN ORAL INTERPRETATION

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Abstract. *This study examines the impact of speech rate and articulation characteristics on translation quality in English–Uzbek oral interpretation, with a focus on both simultaneous interpretation (SI) and consecutive interpretation (CI). While extensive research exists on major language pairs such as English–Chinese or English–Arabic, empirical findings on English–Uzbek interpreting remain scarce due to the limited availability of linguistic corpora and training resources for Uzbek, a mid-resource Turkic language. Drawing on cross-linguistic interpreting research, this paper analyses how speech rate (words per minute), articulation clarity, accentedness, prosody, and connected-speech reductions influence interpreter performance in terms of accuracy, completeness, fluency, and cognitive load. The findings highlight that fast speech rates (above 150–160 wpm) significantly reduce comprehension, shorten the ear-voice span, and increase omissions, particularly for trainee interpreters. Poor articulation—such as strong non-native accents, rapid reductions, lack of pauses, and unclear intonation—further compounds processing challenges by reducing intelligibility at the input stage. These difficulties are amplified in the English–Uzbek pair due to typological differences in word order, morphological complexity, rhythm, and phonological inventories. The study concludes with recommendations for improving interpreting quality through rate moderation, targeted training on accented and rapid speech, enhanced interpreter strategies, and the integration of speech-technology tools for skill development.*

Keywords: *Speech rate; articulation; oral interpretation; simultaneous interpretation; consecutive interpretation; English–Uzbek interpreting; ear-voice span; cognitive load; interpreter training; connected speech; accent intelligibility; typological differences*

Oral interpretation (also known as interpreting) encompasses simultaneous interpretation (SI, real-time translation while the speaker talks) and consecutive interpretation (CI, translation after segments of speech). Translation quality is typically evaluated by accuracy (fidelity to meaning), completeness (no omissions), fluency (natural target language flow), grammatical correctness, and appropriate terminology. Key source speech variables impacting quality include speech rate (words per minute, wpm, or syllables per minute) and articulation characteristics (clarity of pronunciation, enunciation, intonation, pauses, reductions, and accent strength).

High speech rates increase cognitive load on interpreters, leading to omissions, summarization, or errors, particularly in SI where ear-voice span (EVS, lag between hearing and speaking) is critical. Poor articulation (e.g., mumbling, strong accents, or connected speech reductions) compounds this by reducing comprehension, forcing interpreters to guess or lag. These effects are well-documented in interpreting studies, though research on less common language pairs like English-Uzbek remains limited as of November 2025. English-Uzbek interpreting occurs in contexts like diplomacy, business (e.g., Uzbekistan's international partnerships), education, and conferences, where English often serves as the source language (A) and Uzbek as the target (B) or vice versa.

This thesis synthesizes general interpreting research (primarily from high-resource pairs like English-Chinese, English-Arabic, or English-European languages) and applies it to English-Uzbek, highlighting typological challenges. Specific studies on English-Uzbek are scarce, reflecting Uzbek's status as a mid-resource Turkic language with limited corpora for interpreter training.

Speech Rate in Oral Interpretation: General Impacts on Quality

Speech rate is measured in wpm (English: average conversational 120-150 wpm; public speaking up to 180+ wpm) or syllables per minute (more cross-linguistically comparable). In SI, interpreters manage an EVS of 3-10 seconds; faster rates compress this, reducing processing time.

Key findings from research:

- **Optimal Rates**: Interpreters handle up to 120-140 wpm comfortably; above 150-160 wpm, quality drops significantly (increased omissions, errors, lag). A 2025 study on trainees found fast speech rate (FSR >150 wpm) led to lower accuracy and completeness, though some experienced interpreters cope via anticipation strategies.
- **Cognitive Effects**: Faster rates accelerate information density, shortening EVS and forcing strategic omissions (e.g., dropping redundancies). In one PLOS One study, faster rates reduced EVS across measures, indicating heightened cognitive effort and risk of breakdown.
- **Trainee vs. Professional**: Trainees suffer more; a study showed null impact on quality for professionals in some cases, but trainees perceived fast speech negatively, leading to stress and disfluency (longer pauses, repairs in output).
- **Directionality**: A-to-B (English to Uzbek) may be harder with fast English due to syntactic differences; B-to-A allows more control if Uzbek speaker slows down.

In CI, rate impacts less severely as interpreters note-take during pauses, but very fast delivery still causes incomplete notes and memory overload.

Articulation Characteristics and Their Role

Articulation encompasses phoneme clarity, intonation, stress, rhythm, and reductions (e.g., "gonna" for "going to"). Poor articulation increases source text (ST) ambiguity.

Impacts:

- **Strong Accents (StrA)** → Non-native accents (e.g., heavy Indian or Arabic English) reduce intelligibility, lowering SI quality more than FSR alone. A Macquarie University study found StrA + FSR compound effects, causing up to 30-50% more errors in comprehension and rendition.
- **Reductions and Linking** → English connected speech (elisions, assimilations) challenges non-native interpreters, leading to mishearings (e.g., "wanna" heard as "want to" incorrectly).
- **Pauses and Intonation** → Lack of pauses in fast speech hinders segmentation; unnatural intonation (monotone) reduces prosodic cues for meaning.
- **Disfluency in Output** → A 2025 Frontiers study on interpreting students linked input articulation issues to output disfluency (higher pause lengths, repair rates).

Combined with rate: FSR + poor articulation exponentially raises error rates, as interpreters expend effort on decoding rather than translating.

Specific Insights for English-Uzbek Oral Interpretation

English (Indo-European, analytic/isolation tendencies, SVO word order, stress-timed rhythm) and Uzbek (Turkic, agglutinative, SOV, vowel harmony, syllable-timed) differ profoundly, amplifying rate and articulation impacts.

Challenges from Speech Rate

- **Information Density and Morphology** — English conveys information in shorter phrases; Uzbek uses suffixes for grammar (e.g., English "in the houses of my friends" vs. Uzbek "do‘stlarimning uylarida" – one long word). Fast English (>140 wpm) forces Uzbek interpreters to expand output, increasing lag and omissions in SI.
- **Rhythm Differences** — English stress-timing leads to reductions in fast speech; Uzbek syllable-timing requires clearer enunciation. Fast English can result in Uzbek output sounding rushed or unnatural.
- **Experiential Insights** — In Uzbekistan's contexts (e.g., SCO summits, business meetings), English speakers (non-native) often speak fast without pauses, leading to incomplete Uzbek renditions. Consecutive is preferred for accuracy in high-stakes settings.

Challenges from Articulation

- **Phonological Contrasts** → English has dental fricatives (/θ/, /ð/), diphthongs, and schwa; Uzbek lacks these, with uvulars (/q/, /gh/) and front/back harmony. Poorly articulated English (e.g., American rhotacism or British linking) causes misperceptions (e.g., "think" heard as "sink").
- **Accent Issues** → Non-native English speakers (e.g., Russian-influenced in Uzbekistan) may transfer L1 articulation, making fast speech unintelligible. Uzbek interpreters trained on standard British/American English struggle with accented input.

- **Vowel Harmony and Clarity** → In Uzbek-to-English, unclear vowel articulation disrupts harmony, making output sound non-native and reducing perceived quality (though accuracy may remain).
- **Practical Experience** → Anecdotal reports from Uzbek interpreters (e.g., in Tashkent conferences) note that fast, accented English leads to higher fatigue and requests for speaker moderation. In CI, note-taking helps, but articulation lapses still cause errors in terminology (e.g., technical terms in energy sector talks).

No large-scale empirical studies exist specifically on English-Uzbek as of 2025, but analogous pairs (e.g., English-Turkish, another Turkic language) show similar patterns: agglutination exacerbates lag in fast SI.

Measurement and Evaluation of Quality

Quality metrics (e.g., from AIIC or ISO standards):

- Accuracy: 95%+ semantic fidelity.
- Fluency: Target-like rate (Uzbek conversational ~100-130 syllables/min).
- Tools: Human evaluation (holistic/error-counting) or automatic metrics (correlating poorly with rate effects in 2024 studies).

In practice, fast/articulation-poor input lowers scores by 20-40% in trainee performances.

Recommendations for Improving Quality in English-Uzbek Interpreting

1. **Speaker Guidelines** — Advise speakers to aim for 100-120 wpm, articulate clearly, pause after ideas.
2. **Interpreter Strategies** — Use anticipation, chunking, salami technique (slicing long sentences); train on accented/fast speech via corpora (limited for Uzbek, but use YouTube/TED with subtitles).
3. **Training** — Exposure to varied rates/accents; glossaries for Uzbekistan-specific terms (e.g., Silk Road initiatives).
4. **Technology Aids** — Real-time transcription (e.g., Whisper AI) for hybrid support; CAI tools for practice.
5. **Directionality Preference** — B-to-A (Uzbek to English) often yields higher quality due to native target control.

Conclusion. This research demonstrates that speech rate and articulation quality are decisive factors influencing interpreter performance in English–Uzbek oral interpretation. High speech rates compress processing time, reduce the ear-voice span, and increase the likelihood of omissions, errors, and disfluencies—effects observed in both SI and CI, but especially acute for trainees. Poor articulation, including heavy accents, reduced prosody, rapid connected speech, and unclear enunciation, further intensifies cognitive load by complicating the decoding of the source message. When combined, these variables significantly degrade translation quality. The typological asymmetry between English and Uzbek—differences in syntax (SVO vs. SOV), agglutinative morphology, phonological

systems, and rhythmic organization—amplifies the negative effects of fast and poorly articulated English input. Uzbek interpreters must frequently expand English segments into longer morphologically complex units, increasing lag and cognitive burden.

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