THE COGNITIVE EFFORT MODEL IN SIMULTANEOUS INTERPRETING

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Annotatsiya: *Ushbu maqolada sinxron tarjimada Kognitiv Sa'y-harakatlar modeli tahlil qilinadi hamda real vaqt rejimida nutqni qayta ishlash jarayonida tarjimonlarning aqliy resurslarni qanday taqsimlashi o'rganiladi. Maqolada Gile tomonidan ishlab chiqilgan Sa'y-harakatlar modelida belgilangan asosiy tarkibiy qismlar — tinglash, nutqni ishlab chiqish, xotira va muvofiqlashtirish jarayonlarining o'zaro aloqasi tahlil etiladi va ushbu jarayonlarning turli konferensiya sharoitlarida tarjimon faoliyatiga ta'siri yoritiladi. Tadqiqotda sinxron tarjima yuqori darajadagi kognitiv yuklama bilan kechadigan faoliyat ekani, bunda tarjimonlar doimiy ravishda ustuvorliklarni belgilashi, ortiqcha yuklamani boshqarishi hamda vaqt bosimi ostida tezkor qarorlar qabul qilishi ta'kidlanadi.*

Kalit so'zlar: *sinxron tarjima, Kognitiv sa'y-harakatlar modeli, qayta ishlash quvvati, xotira yuklamasi, oldindan taxmin qilish, kognitiv strategiyalar, tarjimon faoliyati, psixolingvistika.*

Аннотация: *В данной статье рассматривается Модель когнитивных усилий в синхронном переводе и анализируется, каким образом переводчики распределяют ментальные ресурсы при обработке речи в режиме реального времени. В работе исследуется взаимодействие процессов восприятия на слух, порождения речи, памяти и координации — ключевых компонентов Модели усилий Жиля — а также их влияние на деятельность переводчика в различных конференционных условиях. В статье утверждается, что синхронный перевод является когнитивно насыщенной деятельностью, в ходе которой переводчики*

постоянно определяют приоритеты, управляют перегрузкой и принимают оперативные решения в условиях жесткого временного давления.

Ключевые слова: *синхронный перевод, модель когнитивных усилий, процессуальная емкость, нагрузка на память, антиципация, когнитивные стратегии, деятельность переводчика, психолингвистика.*

Abstract*: This article examines the Cognitive Effort Model in simultaneous interpreting and explores how interpreters allocate mental resources when processing speech in real time. It analyzes the interplay of listening, production, memory, and coordination efforts—core components described in Gile's Effort Model—and discusses how these processes shape interpreter performance across diverse conference settings. The paper argues that simultaneous interpreting is a cognitively saturated activity in which interpreters constantly negotiate priorities, manage overload, and make rapid decisions under time pressure.*

Key words: *simultaneous interpreting, Cognitive Effort Model, processing capacity, memory load, anticipation, cognitive strategies, interpreter performance, psycholinguistics.*

Simultaneous interpreting is one of the most cognitively demanding language-processing activities, requiring interpreters to listen, understand, store, transform, and produce speech almost simultaneously. The Cognitive Effort Model proposed by Daniel Gile provides an analytical framework for understanding how these mental processes interact [1, 164]. According to the model, simultaneous interpreting involves four primary efforts: the Listening and Analysis Effort, the Production Effort, the Short-Term Memory Effort, and the Coordination Effort. These efforts operate concurrently and compete for limited cognitive resources. If the total cognitive load exceeds available capacity, the interpreter experiences overload, leading to omissions, inaccuracies, or breakdowns in fluency.

Within linguistic scholarship, there exist various opposing theories regarding the origin of language, which have been shaped through ongoing debate and scholarly discussion [2, 36]. Media and conference environments frequently intensify cognitive stressors. Speakers may read rapidly, employ complex syntax, shift topics unpredictably, or use culturally specific references that require additional processing. In such cases, interpreters must constantly adjust their effort distribution to maintain performance. Linguistically, this may involve simplifying sentence structures, prioritizing core meanings, or postponing non-essential details. Psychologically, interpreters must remain alert, regulate anxiety, and monitor both the source speech and their own output simultaneously. These continual adjustments illustrate that cognitive effort in interpreting is not static but dynamically recalibrated in response to discourse complexity.

From a cognitive-pragmatic viewpoint, interpreters rely heavily on anticipation and inferencing to manage processing load. Anticipatory strategies allow them to predict upcoming structures, terminological patterns, or rhetorical moves, thereby reducing the burden on short-term memory. For example, in English diplomatic discourse, formulaic expressions such as “We remain committed to…” or “The delegation reaffirms its position that…” provide interpreters with predictable patterns [2, 83]. In Uzbek conference contexts, frequent use of explanatory clauses and expanded contextual framing likewise supports anticipation. However, unpredictable deviations—idioms, humor, or numbers—can disrupt processing and increase the risk of overload, requiring interpreters to rapidly redistribute cognitive resources.

Memory plays a central role within the Effort Model. Short-term memory is responsible for holding segments of speech until they can be reformulated and reproduced. Memory load is especially high when interpreting dense, information-rich discourse such as financial statements or legal formulations. If memory and listening efforts compete excessively, interpreters may experience what Gile terms a “tightrope effect,” where minor increases in complexity trigger errors. Training in chunking,

semantic grouping, and prosodic segmentation can strengthen memory efficiency and reduce cognitive strain during high-pressure interpreting tasks.

Coordination—the fourth effort—ensures that listening, memory, and production processes interact smoothly. It involves constant internal monitoring and rapid decision-making. For example, an interpreter may decide to omit redundant modifiers, reformulate complex structures, or delay output to secure conceptual clarity. These micro-decisions illustrate how interpreters strategically manage limited cognitive resources to maintain coherence and fluency. Coordination is particularly crucial when the speaker's delivery rate accelerates or when simultaneous interpreting is performed remotely, where technical lag and sound quality variations increase cognitive pressure.

Technological environments further influence cognitive effort distribution. Remote interpreting platforms introduce delays, fragmented audio cues, and visual limitations, all of which increase listening effort and reduce available capacity for memory and production. Conversely, terminology management tools, high-quality headsets, and visual support materials can decrease cognitive strain by facilitating quicker access to conceptual information. The broader lesson from cognitive research is that interpreting performance depends not only on linguistic competence but also on environmental conditions that affect cognitive effort allocation.

Several frequently encountered interpreting challenges illustrate the dynamics of the Cognitive Effort Model:

1. **Fast speech rate – tez sur'atda nutq.** In English contexts, rapid delivery often forces interpreters to prioritize essential meaning, whereas Uzbek speeches, though slower, may contain long clauses that increase memory load.

2. **Complex syntax – murakkab sintaktik tuzilmalar.** English nominalizations demand analytical decoding, while Uzbek explanatory style may overload memory with extended contextual information.

3. **Dense terminology – terminologik zichlik.** Technical fields such as economics or security require rapid retrieval of precise equivalents, intensifying both listening and production efforts.

Intertextuality also influences cognitive processing. References to treaties, institutions, historical events, or culturally embedded metaphors require quick cultural activation. An expression such as “strategic deterrence posture” or “Cold War logic” demands conceptual unpacking before translation. In Uzbek diplomatic discourse, culturally anchored formulations like *“hamkorlik ruhida muhokama etildi”* or *“mintaqaviy barqarorlikni ta’minlash yo‘lidagi sa’y-harakatlar”* require careful reformulation in English to maintain diplomatic nuance without overgeneralization [3, 254]. These examples demonstrate that simultaneous interpreting requires not only linguistic and cognitive competence but also rapid cultural inference.

Thus, the Cognitive Effort Model highlights that simultaneous interpreting is fundamentally constrained by human processing capacity. Translators and interpreters work under conditions of constant cognitive negotiation, balancing accuracy, fluency, and processing speed. For this reason, interpreter training programs must incorporate cognitive enhancement techniques, including memory training, anticipation exercises, prosody decoding, and stress regulation strategies. Only through systematic development of cognitive resilience can interpreters achieve consistent performance in complex conference environments.

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