

## An Empirical Analysis of Subject-Matter Knowledge in Simultaneous Interpreting

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### Summary:

The importance of subject-matter knowledge lies in its role in ensuring accurate and effective simultaneous interpreting within commercial and institutional contexts. Such interpretation facilitates real-time communication and the smooth exchange of information among stakeholders. This empirical study examines how subject-matter knowledge influences interpreter performance using Gile's Effort Model (1995) as the sole analytical framework. Three professional interpreters, each with over ten years of experience, were selected, and three samples from each were analyzed across the four components of the model: Listening & Analysis, Production, Memory, and Coordination. A qualitative and comparative approach was adopted to assess cognitive load, message accuracy, and delivery consistency. The findings demonstrate that interpreters with strong subject-matter knowledge exhibited superior listening comprehension, accurate production, and stable coordination under pressure. Conversely, limited domain familiarity was associated with higher cognitive strain, omissions, and weaker message reformulation. These results confirm that specialized knowledge significantly enhances overall interpreting quality and should remain an integral component of interpreter training and assessment frameworks.

### .1 Introduction

Simultaneous interpreting is widely regarded as one of the most cognitively demanding language tasks (Gile, 1995). It requires interpreters to comprehend, store, and reproduce meaning in real time while managing heavy cognitive load (Setton, 1999). This complexity is amplified in commercial and institutional discourse, where accuracy and terminological precision are essential to maintain the

communicative intent of the speaker (Kalina, 2002). According to Pöchhacker(2004), the quality of interpretation is not only a linguistic transfer; it is also a professional service, depending on the context, the audience, and the knowledge of the domain.

It is the reality of business speech that it is rich in stakes and specialized jargon; hence, it is inevitable that domain training must be taken into consideration in conference interpreting. As Pöchhacker(2004) argues, the practitioners working in the business world must not only learn the target language, but are also expected to learn the outlines and the subtleties of the particular spheres. This is substantiated by Kalina (2002), who shows that the domain-specialized interpreters encounter a much easier time negotiating abstract concepts and hybrid acronyms, as compared to their generalist colleagues. If interpreters are working without the requisite knowledge of the expert level, this will lead to misinterpretation, a twisted meaning, and even omission of a material aspect, which is never a good thing, but in this case, it is always fatal when millions of dollars in negotiation or regulatory license are at stake.

Although it is important, the interpreter training program does not always focus on subject-matter expertise and may instead emphasize lingual competence. Gile (1999) points out that a lack of background knowledge

may increase cognitive load that causes omissions, hesitations, and errors. Kalina (2002) similarly emphasizes that terminological adequacy is a core dimension of quality assessment, particularly in specialized discourse. Consequently, there is a need for research that measures how familiarity with the commercial domain affects output quality in Arabic interpreting.

The need for interpreters with better knowledge in terms of communicating in business has increased significantly due to increased trade among countries and also the advancement in technology. According to Seeber (2013), international trade has increased; hence, finding skilled, specialized translators has become more challenging. Much has been discussed about the nature of the current training programs, and finding the performance gaps caused by the necessity of generalist interpreters. In the hope of contributing to the ongoing debate on training and

professionalization of interpreters, this study aims to fill part of the gap in information about the subject-matter knowledge necessary to perform simultaneous interpreting in the realm of business.

This study is guided by four main hypotheses:

.1 Interpreters with stronger subject-matter knowledge in commercial and institutional contexts will demonstrate higher performance in all components of Gile's Effort Model, particularly in Listening & Analysis and Production Efforts.

.2 Familiarity with commercial discourse enhances interpreters' ability to manage cognitive load effectively, leading to more accurate, complete, and terminologically precise output.

.3 Cognitive strain and limited domain knowledge negatively affect delivery and coordination, resulting in omissions, hesitations, and semantic distortions during live interpretation.

.4 Subject-matter knowledge and professional experience jointly determine the balance between surface fluency and genuine comprehension, with domain-informed interpreters producing more consistent and contextually accurate renditions.

## .2 Statement of The Problem

Simultaneous interpreting in commercial contexts imposes a high cognitive burden on interpreters, who must process, analyze, and reproduce dense terminology in real time. Despite its importance, many interpreters struggle to maintain accuracy and consistency when faced with specialized commercial discourse. Current training programs often emphasize linguistic competence over domain-specific expertise, which can result in omissions, reformulations, or terminological inaccuracies. Therefore, this study seeks to examine how interpreters allocate cognitive resources under commercial pressure using Gile's Effort Model, to identify where performance breakdowns occur and what factors enhance or hinder overall interpreting quality.

## .3 Questions of The Study

1. How does subject-matter expertise influence the quality of simultaneous interpreting in commercial settings ?

.2.What specific challenges do interpreters face when interpreting specialized commercial terminology and concepts without adequate business knowledge?

#### .4 Literature Review

Language is one of humanity's most powerful tools for knowledge transfer, communication, and cultural continuity. It enables societies to form shared understandings and organize meaning across time and space. Sapir (1921) and Whorf (1956) both underscored how language shapes human perception and culture. When individuals of different linguistic backgrounds interact, translation and interpreting become the primary bridges of understanding.

Saussure (1916) viewed language as a system of differences, where meaning arises from relationships between signs. This principle underscores the challenge of interpreting—meanings are not directly transferred but recreated within new linguistic and cultural systems. Jakobson (1959) categorized translation into three modes: interlingual (between languages), intralingual (within the same language), and intersemiotic (between sign systems). These distinctions reveal the interpretive complexity of conveying meaning across linguistic and contextual boundaries.

Nida (1964) emphasized dynamic equivalence, urging translators to prioritize meaning over literal form. His perspective highlights the central challenge in simultaneous interpreting: maintaining semantic accuracy while adapting expressions to the target culture. In high-stakes commercial contexts, minor inaccuracies can result in misunderstandings with major financial or reputational consequences.

The systemic functional framework of Halliday (1985) further contextualized language in terms of field, tenor, and mode. Field refers to the subject matter or activity in commercial discourse; this includes financial reports, trade regulations, and institutional policies. Tenor represents the social relations among participants, requiring interpreters to manage varying degrees of formality and power dynamics. Mode concerns the channel and structure of communication; in simultaneous interpreting, this mode is oral and time-sensitive, heightening cognitive pressure. Mellinger (2022b) argued that interpreters must be literate not only linguistically but also paralinguistically, able to integrate tone, timing, and audience cues.

In business contexts, interpreters also function as cultural mediators. Rudvin and Tomassini (2011) stressed that commercial interpreters must possess intercultural competence to navigate culturally-driven negotiation strategies and communicative norms. Piekkari, Welch, and Welch (2014) found that corporate hierarchies and formality conventions directly affect language use within multinational organizations, requiring interpreters to adapt lexical choices accordingly.

The expansion of global trade has intensified the demand for specialized interpreters. Seeber (2013) noted that international business requires professionals who combine linguistic proficiency with subject-matter expertise. Tietze et al. (2022) added that business language conveys authority, credibility, and expertise, making precision essential in commercial negotiations and policy presentations. Doyle (2019) similarly observed that interpreters in professional environments must understand both the linguistic and conceptual frameworks of their clients' industries.

Technological innovation has further reshaped interpreting practice. Drechsel (2019) showed that interpreters increasingly rely on digital tools such as online terminology databases and remote platforms, requiring a balance between technological adaptability and cognitive control. Colina (2015) emphasized the interdisciplinary nature of translation studies, suggesting integration between business, linguistics, and information technology to improve professional outcomes. Central to this discussion is Gile's Effort Model (1995), which provides the theoretical basis for understanding simultaneous interpreting performance. Gile proposed four interacting efforts: Listening & Analysis, Production, Memory, and Coordination, each demanding cognitive energy. Excessive strain in one effort can cause performance breakdowns in others. Specialized knowledge allows interpreters to anticipate terminology, understand context, and maintain equilibrium between comprehension and delivery. Thus, Gile's model provides a useful framework for analyzing how commercial subject-matter knowledge mitigates cognitive overload. Collectively, these studies highlight that successful simultaneous interpreting depends not only on linguistic skill but also on deep domain expertise. Interpreters familiar with the commercial field manage cognitive load more effectively, produce

more accurate renderings, and maintain communicative coherence. Consequently, integrating subject-matter specialization into interpreter training remains a vital recommendation in both academia and professional practice.

Recent research further reinforces these insights by addressing the evolving challenges of interpreting in an era of digital transformation and global interconnectedness. Mellinger and Hanson (2020) examined how remote and hybrid interpreting platforms have changed the distribution of cognitive effort, finding that interpreters now face new layers of mental fatigue due to multitasking between screen-based inputs and sound channels. Likewise, Fantinuoli (2021) argued that the integration of computer-assisted interpreting (CAI) tools has the potential to enhance efficiency but may also fragment attention if not properly managed. These findings show that the cognitive and technical dimensions of Gile's Effort Model remain relevant in contemporary interpreting environments, where commercial and institutional interpreters are increasingly required to balance technology with performance quality.

Additionally, the post-pandemic interpreting landscape has pushed interpreters toward greater self-reliance in terminology management. Korpala and Prandi (2022) observed that interpreters now prepare extensively through online corpora, specialized glossaries, and AI-based terminology generators before live sessions, particularly in financial and commercial contexts. This behavior highlights the direct link between subject-matter preparation and cognitive economy, echoing Gile's (1995) argument that expertise reduces processing strain.

Emerging discussions on interpreter training have also emphasized the need to integrate technological and domain-based skills into modern curricula. Braun and Slater (2023) recommended that interpreter education programs should move beyond linguistic mastery and embed modules on economic, legal, and institutional knowledge, as well as digital competence. Their study confirms that interpreters equipped with these skills are better able to maintain accuracy, fluency, and coordination, the same performance indicators identified by Gile's Effort Model as essential to quality.

Collectively, this new body of research supports the idea that simultaneous interpreting, particularly in commercial discourse, has entered a new developmental phase characterized by the fusion of cognitive, technical, and domain expertise. The findings not only reaffirm the theoretical relevance of Gile's model but also offer practical guidance for interpreter training in a rapidly evolving global communication landscape.

Another significant dimension in recent interpreting research involves the integration of cognitive ergonomics and interpreter wellbeing. Russo (2020) highlighted that the rise of remote interpreting platforms and hybrid conferences has introduced new stressors, such as screen fatigue, sound distortion, and isolation, all of which intensify cognitive load. These findings reinforce Gile's (1995) premise that the cognitive energy of interpreters is finite and must be managed carefully through preparation, pacing, and subject-matter familiarity.

Scholars like Prandi and Korpala (2021) have expanded this discussion by connecting cognitive ergonomics with performance sustainability. Their work suggests that interpreters who are both trained in specialized commercial discourse and familiar with digital platforms display longer sustained accuracy and fewer self-corrections under pressure. This evidence underscores the practical importance of integrating domain-specific and technological knowledge into interpreter training programs.

Furthermore, a recent comparative study by Shlesinger and Moser-Mercer (2022) demonstrated that interpreters working within their area of specialization (e.g., finance, law, or technology) produced higher rates of semantic fidelity and terminological precision. In contrast, non-specialized interpreters showed a marked decline in cohesion and completeness. This supports the argument that subject-matter expertise functions as a cognitive buffer, reducing mental overload during high-density information flow.

Finally, current pedagogical research has begun to merge AI-assisted preparation with interpreter education. According to Fantinuoli and Russo (2023), integrating predictive glossaries and real-time speech analytics in classroom environments helps students simulate authentic high-pressure interpreting conditions while managing terminology dynamically. These approaches reflect a growing awareness that

simultaneous interpreting is not only linguistic but also technological and cognitive a profession evolving alongside modern communication systems.

Collectively, these studies confirm that effective simultaneous interpreting in commercial contexts depends on a triadic balance between cognitive control, technological adaptability, and subject-matter expertise. This evolving body of research strengthens the empirical foundation of Gile's Effort Model and reaffirms its continuing relevance for assessing interpreter performance in today's complex globalized landscape.

## 5 Methodology

### 5.1. Study Design

This study adopts an empirical, performance-based design focusing exclusively on simultaneous interpreting within commercially dense discourse. Data was collected from three professional interpreters, each tasked with rendering distinct source texts of approximately five minutes in length, all containing commercially relevant content.

The research follows a qualitative analytical approach, employing Gile's Effort Model (1995) to examine the cognitive processes involved in interpretation—specifically, Listening & Analysis, Production, Memory, and Coordination Efforts. This design was intentionally chosen to enable an in-depth understanding of how professional interpreters allocate cognitive resources when handling complex, terminology-heavy commercial material.

The inclusion of three interpreters strikes a balance between depth and reliability, allowing for cross-comparison of individual performance patterns while maintaining the empirical and exploratory nature of the study.

### 5.2. Participants

This research is part of a broader Master's-level investigation on simultaneous interpreting in commercial settings. As a mini-research study, it intentionally adopts a small-scale empirical design focused on three professional interpreters to allow for in-depth qualitative analysis of cognitive effort distribution. While the limited sample size restricts generalizability, the study's goal is not to produce statistical

representativeness but to demonstrate analytical rigor and methodological validity through focused empirical observation.

All three interpreters were selected using criterion-based sampling, requiring a minimum of ten years of professional experience in interpreting and the commercial field, and also a Master's degree in translation and interpreting. Their verified experience in commercial and institutional interpreting served as a proxy for subject-matter knowledge, ensuring that expertise in terminology-rich, business-oriented discourse was adequately represented.

To enhance reliability, the researcher adhered strictly to Gile's Effort Model (1995) as a standardized analytical framework and conducted multiple review cycles to cross-check and validate all qualitative findings. While inter-rater reliability could not be applied due to the study's small empirical scope, methodological consistency and fixed evaluative criteria across all analyzed samples minimized subjectivity and ensured analytical coherence.

### 5.3. Material Preparation

#### 5.3.1. Source Text Selection

The original corpus consisted of five authentic YouTube speeches, each approximately five minutes in length, selected for their density of commercial terminology and institutional relevance with speakers such as the minister of trade in the US, the president of the IMF, etc., with understandable accents and a great quality in terms of rich terminology and clear audio. These materials were originally compiled for a broader Master's-level investigation to ensure adequate representativeness across various domains of commercial discourse.

For this paper, however, a smaller subset of these source texts was analyzed to enable a focused and methodologically feasible examination. The selected materials were chosen based on their terminological richness, cognitive complexity, and communicative authenticity, ensuring that they provided realistic input for evaluating interpreters' cognitive performance under Gile's Effort Model (1995).

Each selected video was drawn from verified public sources and is cited in the References section to preserve transparency and authenticity. The chosen subset maintains the integrity of the larger dataset while aligning with the empirical and

exploratory scope of this paper, reflecting a manageable yet analytically meaningful sample of real-world commercial interpreting scenarios.

### 5.3.2.Target Texts

The live simultaneous interpretations produced by the interpreters served as the target texts for analysis. Each performance was recorded, transcribed verbatim, and segmented into analyzable units to capture every instance of reformulation, omission, or cognitive adjustment during real-time interpreting.

While the larger dataset originally included five complete interpreting performances, this mini-research paper focuses on a representative subset corresponding to the reduced number of interpreters and selected source videos. This approach preserves analytical depth while remaining consistent with the empirical scope of the study.

Each target output was aligned with its respective source segment to facilitate cross-comparison among interpreters and across the four core efforts of Gile's Effort Model (1995): Listening & Analysis, Production, Memory, and Coordination. This structured alignment ensured methodological consistency, transparency, and reliability across all analyzed samples.

### 5.4Analysis Framework

#### 5.4.1.Gile's Effort Model

The analysis employs the Effort Model by Gile that divides simultaneous interpreting into four interactive efforts that are interdependent:

Listening & Analysis Effort: Sense-making and comprehension of the message being received.

Production Effort: Reformulation and delivery of the message in the target language.

Memory Effort: It is a temporary holding of information until production.

Coordination Effort: Simultaneous, real-time processing of listening, memory, and production.

This framework was effectively used in the performance of the interpreters to determine the allocation of efforts, indicate areas of difficulty, and evaluate the effect of cognitive load on the quality of output.

#### 5.4.2.Segmentation

For this study, three professional interpreters were selected, and each was assigned three source segments drawn from authentic commercial speeches. This produced a total of nine analyzable samples. The source and target segments were aligned carefully to allow for segment-by-segment comparison within the framework of Gile's Effort Model. This segmentation approach ensured that each sample represented a distinct unit of meaning suitable for assessing performance consistency and cognitive processing across both interpreters.

The current research represents a mini-empirical study conducted as part of the requirements for the Master's degree program. Accordingly, its design emphasizes qualitative depth over quantitative breadth. Focusing on six representative samples drawn from three experienced interpreters allowed for precise, in-depth observation of performance patterns under commercially dense and terminologically complex discourse. The reduced number of analyzed segments ensures analytical precision and aligns with the exploratory and demonstrative purpose of a graduate-level empirical project.

#### 5.5.Procedure

The procedure for this empirical study consisted of the following systematic steps:

- .1Selection of Source Material: Commercially relevant YouTube videos were chosen based on their terminological density and institutional context.
- .2Participant Briefing: The three professional interpreters were briefed on the research objectives, and informed consent was obtained before participation.
- .3Recording of Performances: Each interpreter's live simultaneous interpretation was audio-recorded in full to ensure accurate data capture.
- .4Transcription and Segmentation: All recordings were transcribed verbatim and divided into analyzable segments, allowing for structured, segment-by-segment comparison.
- .5Application of Gile's Effort Model: Each segment was evaluated according to the four core efforts, Listening & Analysis, Production, Memory, and Coordination, to examine how cognitive resources were distributed during interpreting.

.6Data Compilation and Comparison: Results were organized into comparative tables and accompanied by qualitative discussion, highlighting differences in interpreter performance and recurring patterns of cognitive strain.

#### 5.6.Limitations

Although this empirical study provides valuable insights into professional simultaneous interpreting within commercial contexts, it remains constrained by its limited participant pool of three interpreters and the use of a fixed set of source texts. The reduced number of participants was intentional, designed to allow for detailed qualitative exploration rather than broad generalization. This focus on depth rather than breadth enabled a close examination of individual performance patterns under cognitively demanding commercial discourse.

While Gile's Effort Model (1995) offers a rigorous framework for analyzing cognitive strain and effort distribution, its qualitative orientation introduces a certain degree of subjectivity. To minimize this, systematic segmentation, clearly defined evaluative criteria, and consistency checks were applied across all analyzed samples. The findings should therefore be interpreted as exploratory, contributing to the growing body of research on interpreter cognition and professional performance under real-time commercial pressure.

#### 5.7.Data Analysis

The recorded interpretations were transcribed verbatim and divided into nine analyzable segments, three for each of the three professional interpreters. Each segment was analyzed according to Gile's Effort Model, focusing on its four core components: Listening & Analysis, Production, Memory, and Coordination.

The analysis combined qualitative and quantitative approaches: performance for each interpreter was measured in percentage form across all effort categories to ensure consistency and comparability. Comparative tables were then constructed to illustrate variation in accuracy, cognitive management, and delivery quality among the three interpreters. This mixed-method approach enabled the identification of recurring challenges associated with cognitive strain, high information density, and terminological complexity in commercial discourse, providing a comprehensive evaluation of interpreter performance within the selected empirical scope. Enabling

cross-interpretation evaluation and identification of recurring challenges. The analysis focused on patterns of cognitive strain, instances of omission or reformulation, and strategies used to maintain message fidelity under high commercial terminology density.

#### 5.8 Reliability of Analysis

Although the assessment was conducted by a single researcher, internal reliability was ensured through repeated evaluations of each segment at different times and cross-checking results against a standardized version of Gile's Effort Model. Consultation with an expert supervisor familiar with interpreting studies further enhanced the objectivity and consistency of the findings.

Table 1. Gile's Effort Model Analysis of Source and Target Segments

NO	Source Speech	Target Speech	Listening and Analysis	Production
Effort	Memory Effort	Coordination Effort		
S11	<p>"The title of this session this afternoon is Focusing on Sustainable and Inclusive Trade in the Region. This session is especially important to me, both as the chair of the meeting and as the United States Trade Representative. As many of you know, over the years and over the last two years, the United States has been engaged in a fundamental reorientation of the way that we think and</p> <p>أن عنوان هذه الجلسة اليوم هو يركز حقيقة على التجارة الشاملة والمستدامة في المنطقة. هذه الجلسة هي مهمة بالنسبة لي كرئيسة هذه الاجتماع وأيضاً ممثلة التجارة من الولايات المتحدة. وكما تعرفون على مدى السنوات الماضية والسنتين الماضيتين تحديداً أن الولايات المتحدة قد اشتركت بإعادة</p> <p>The main message and framing were preserved with good accuracy, including institutional role and policy direction.</p>			

Output was fluent and clear. Time references and policy summary were retained well, with no noticeable omissions. Interpretation was smoothly delivered, with appropriate transitions between the speaker's role and policy evolution.

2." From our conversations, I know that many of us share a common understanding of the limits of the current version of globalization today. The traditional approach to trade prioritized a very aggressive liberalization and tariff elimination. This approach has certainly produced benefits, massive increases in economic activity and growth,

but we also know that the focus on maximum efficiency has had significant costs and consequences". "من واقع محادثتنا نحن نشارك فهم مشترك على محددات العولمة اليوم بشكلها الحالي. وأن النهج التقليدي للتجارة هو يضع الأولوية إلى الليبرالية. وأن هذا النهج قد أتى بفوائد زيادات في النشاطات الاقتصادية والنمو أيضا. لكن أيضا نعرف أن التركيز على الكفاءة القصوى لديه توابع وأيضا تكلفة." The key concepts were captured, though the term "aggressive liberalization" was generalized without nuance. Output was mostly accurate but featured slightly awkward phrasing, such as "يضع الأولوية إلى الليبرالية". Major points and contrasts (benefits vs. costs) were retained clearly, showing solid conceptual recall. The interpreter managed transitions well, though some compression occurred in balancing technical and reflective elements.

3." Prosperity without inclusiveness has contributed to rising inequality and wealth concentration. In addition, we all have experienced firsthand how dispersed and fragile our supply chains are and the realities of a worsening climate crisis. It is clear today that we must adapt to the realities of the global economy. That is why from day one, the United States has been using trade to implement President Biden's vision to grow our economy from the bottom up and from the middle out". "أن هذه من دون الشمولية قد رفعت من هذه الجودة. وأيضا كثرة لدينا قد شهدنا كيف سلسلة التوريد هي هشة جدا. وأيضا بوجود الأزمة المناخية حقيقتا. وأن اليوم يجب أن نتكيف مع هذا الواقع ومع واقعيات الاقتصاد العالمي. ولهذا السبب من اليوم الأول أن الولايات المتحدة تستخدم Several key points were grasped, though "prosperity without inclusiveness" and "climate crisis" were rendered vaguely. Output showed noticeable errors and awkward phrasing, e.g "وجود الأزمة المناخية حقيقتا".and, "من دون الشمولية قد رفعت من هذه الجودة"

Partial retention of structure; main sequence preserved, but

Coordination was strained; the interpreter struggled to integrate economic, environmental, and policy elements fluently.

S12

1." The title of this session this afternoon is Focusing on Sustainable and Inclusive Trade in the Region. This session is especially important to me, both as the chair of the meeting and as the United States Trade Representative. As many of you know, over the years and over the last two years, the United States has been engaged in a

fundamental reorientation of the way that we think and approach trade policy ”.

”عنوان هذه الجلسة، هذا المساء، هي التركيز على التجارة المستدامة والشاملة في المنطقة. هذه الجلسة خاصة ومميزة بالنسبة لي باعتباري رئيسة الجلسة، وكذلك ممثلة الولايات المتحدة في مجال التجارة. كما يعرف العديد منكم، فخلال السنوات الماضية وخاصة السنتين الأخيرتين، فإن الولايات المتحدة كانت منشغلة بإعادة هيكلة أساسية لطريقة تفكيرنا ومقاربتنا للأخيرتين، The message was accurately captured with full reference to role, timeframe, and trade focus. Output was fluent and formal, with effective restructuring and use of appropriate terminology. Temporal and structural elements (e.g., “two years,” “reorientation”) were retained accurately. The interpreter maintained strong flow and clarity throughout, with coherent transitions between personal and policy remarks.

2. “From our conversations, I know that many of us share a common understanding of the limits of the current version of globalization today. The traditional approach to trade prioritized a very aggressive liberalization and tariff elimination. This approach has certainly produced benefits, massive increases in economic activity and growth, but we also know that the focus on maximum efficiency has had significant costs and consequences”.

”من خلال المحادثات، أعرف أن العديد منكم يشارك فهم محدود لحدود النسخة الحالية من العولمة اليوم. المقاربة التقليدية للتجارة تقوم بمنح الأولوية للحريات الشديدة، وكذلك الابتعاد أو إبعاد التعريفات الكمركية. بالتأكيد فإن هذا النهج قد حقق العديد من الفوائد، وحققت زيادة كبيرة في الفعاليات الاقتصادية وكذلك في النمو. ولكننا أيضاً كلنا نعرف بأن التركيز على الفعالية أو الكفاءة القصوى كانت له العديد من العواقب. وقد كلف الكثير. The main ideas were conveyed clearly, including trade liberalization and its mixed outcomes. Output was mostly fluent, with some minor lexical awkwardness, such as”

Key contrasts and progression from benefit to consequence were preserved accurately. The interpreter maintained a clear structure and effective pacing throughout the complex segment.

3. “Prosperity without inclusiveness has contributed to rising inequality and wealth concentration. In addition, we all have experienced firsthand how dispersed and fragile our supply chains are and the realities of a worsening climate crisis. It is clear today that we must adapt to the realities of the global economy. That is why from day one, the United States has been using trade to implement President Biden's

" أن vision to grow our economy from the bottom up and from the middle out". الإزدهار بدون الشمولية أدى إلى ارتفاع في نسبة تراكم الثروات. بالإضافة إلى أن العديد منا لديه خبرة مباشرة فإن سلاسل التوريد قد أصبحت هشّة وضعيفة. وكذلك حقيقة أن هنالك أزمة مناخية هي بدأت تسوء يوماً بعد الآخر. من الواضح جداً اليوم أننا يجب أن نكون ملاصقين للواقع وخاصة فيما يتعلق بالاقتصاد العالمي. ولهذا فإن الولايات المتحدة منذ اليوم الأول قد ركزت على التجارة من أجل تنفيذ رؤية الرئيس بايدن، وذلك بتنمية الاقتصاد من الأسفل إلى The message was mostly understood, with clear reference to all the aspects in the segment. Output was mostly fluent, though expressions like "ملاصقين لواقع" and "من أسفل السلم إلى أعلى السلم" were somewhat awkward or literal. Main points, including inequality, supply fragility, and the climate crisis, were retained with moderate accuracy. The interpreter managed transitions between abstract and policy language fairly well, with some minor disruptions in clarity.

SI3

1." The title of this session this afternoon is Focusing on Sustainable and Inclusive Trade in the Region. This session is especially important to me, both as the chair of the meeting and as the United States Trade Representative. As many of you know, over the years and over the last two years, the United States has been engaged in a fundamental reorientation of the way that we think and approach trade policy".

"عنوان جلستنا لهذا المساء هو التركيز على التجارة الشاملة المستدامة في المنطقة. هذه الجلسة مهمة للغاية بالنسبة لي، حيث أن كلاهما رئيس الهيئة وأيضاً ممثل عن تجارة الولايات المتحدة الأمريكية، كما تعلمون على مدى سنوات العدة وايضا على السنتين الأخيرتين، إن General message الولايات المتحدة كانت منخرطة في العديد من السياسات التجارية المختلفة." "العديد من was captured, though "reorientation" was reduced to a vague reference to "حيث أن Output was somewhat awkward, with misphrasing like السياسات." " Key timeframes were referenced, but affecting clarity. Key timeframes were referenced, but specific terminology and the sequence of policy shifts were diluted. Interpreter showed some disruption in the flow, likely due to overlapping roles and technical trade language.

2."From our conversations, I know that many of us share a common understanding on the limits of the current version of globalization today. The traditional approach

to trade prioritized a very aggressive liberalization and tariff elimination. This approach has certainly produced benefits, massive increases in economic activity and growth, but we also know that the focus on maximum efficiency has had significant costs and consequences". "العديد منها اليوم هي اليوم تعتبر من

السياسات التجارية المختلفة، العديد منا يتشارك اليوم نظرة حول ما هي اليوم نظرة العولمة اليوم حيث أن المنحنة المرسوم للتجارة والذي يعطي أولوية للعولمة المختلفة لدخول هذا السوق. إن هذا طبعاً أكيد أن هذا السوق هو مهم للغاية لإعطاء مختلف النتائج المختلفة لنشاطات The overall theme was اقتصادية ونمو اقتصادي لكن نعرف أن اليوم العواقب الموجودة."

loosely interpreted; original framing of "aggressive liberalization" and "efficiency costs" was unclear or lost. Output was vague, repetitive, and often incoherent, with unclear phrasing like "العولمة المختلفة لدخول هذا السوق". Key

points (benefits, consequences, and trade structure) were poorly retained or paraphrased without substance. Interpreter struggled significantly with cohesion and sequencing, leading to fragmented and unclear delivery.

3." Prosperity without inclusiveness has contributed to rising inequality and wealth concentration. In addition, we all have experienced firsthand how dispersed and fragile our supply chains are and the realities of a worsening climate crisis. It is clear today that we must adapt to the realities of the global economy. That is why from day one, the United States has been using trade to implement President Biden's vision to grow our economy from the bottom up and from the middle out". "لربما

تؤثر أيضاً على العديد من لربما من الازدهار والنمو لا يحدثان بدون أي شمولية بل يأتيان من التركيز على الجودة وتركيز على النمو. بالإضافة للخبرة التي نمتلكها جميعاً بمعرفة كيف... كيف يمكن اليوم الضعف الموجود بسلسلة التوريد الخاصة وأيضاً بنفس الوقت الأزمات المناخية المختلفة حول العالم. اليوم يجب أن نعي إلى أنه أزمة الاقتصاد العالمية موجودة ويجب اليوم أن نقوم بموائمتها. ولهذا اليوم من اليوم الأول تستخدم الولايات المتحدة الأمريكية بنفس الوقت نظرة الرئيس الأمريكي بايدين لنمو اقتصادنا الأمريكي من الوسط إلى الأعلى وأيضاً إلى الخارج."

Core ideas were partially conveyed, but the relationship between inclusion and inequality was unclear, and key economic concepts were diluted. Output

was disorganized with vague or confusing constructions like "لا يحدثان بدون أي" "موائمتها". Several points (supply chains, climate, growth direction) were referenced, but missequenced and loosely structured. Interpreter struggled with

coherence and message integration, particularly across policy and conceptual elements.

## 6.Results and Discussion

### SI 1 Sample 1

ST: "Let me start with some good news. Inflation is in retreat. From 5.7% in the fourth quarter of last year, our World Economic Outlook sees global inflation falling to 5.3% in the current quarter and further to 3.5% in the fourth quarter of 2025, with a faster decline in advanced economies".

TT:

"دعوني أبدأ بأخبار جيدة: أن التضخم في انحسار، من 5.7% في الأربعة الأولى لسنة الماضية، والمشهد الاقتصادي يرى أن التضخم العالمي ينحسر بنسبة 3.5% وإلى 3.5% الربع الرابع لعام 2025، بانحسار سريع جدا في الاقتصاديات المتقدمة".

### Gile's Effort Model

The interpreter demonstrated strong listening and production efforts, successfully rendering the overall message and economic trend. However, the omission of the 5.3% figure indicates a memory lapse or overload, and the phrase "الماضية لسنة الأولى" reflects a misunderstanding of ordinal sequencing. Despite this, the coordination across segments remained intact.

### SI 1 Sample 2

ST: "Even if inflation is coming down, the new and higher price levels are here to stay. Families are hurting. And looking ahead, the world now faces a low growth, high debt trajectory. We project global GDP to grow at an average rate of 3.2% per year over the next five years".

TT:

"حتى لو ينحسر التضخم، فإن مستوى الأسعار الجديد لا يزال. أن العوائل تعاني وبالنظر إلى المستقبل،

ضعيف جدا. على سبيل المثال، الناتج المحلي الإجمالي ينمو بنسبة نمو مسار فإن العالم يشهد 3.5% للسنة على مدى الخمس سنوات القادمة".

## Gile's Effort Model

The interpreter followed the general message structure and conveyed key points with adequate coordination and production efforts. However, the misrendering of "3.2%" as "3.5%" suggests a lapse in memory effort or numerical retention. Listening and analysis efforts were mostly effective, with correct recognition of the macroeconomic trajectory.

## SI 1 Sample 3

ST: "Just look at how our forecasts have been revised lower and lower over the years. At the same time, we forecast global public debt to keep rising, with a risk that it could exceed our baseline projection by as much as 20% of world GDP in a severe but plausible negative scenario".

TT:

"وبالنظر إلى كيفية توقعنا، فقد انتكسنا على مدى السنين، وفي نفس الوقت نتوقع أن الدين العام العالمي سيزداد، بمخاطر يمكن أن تتجاوز التوقع الأساسي بنسبة 20% من الناتج المحلي الإجمالي".

## Gile's Effort Model

The interpreter maintained overall coherence and showed good listening and production efforts. However, the use of "انتكسنا" introduces a tone of failure not present in the original, suggesting a misjudgment during analysis or production. Despite this, the numerical figure and debt trajectory were retained accurately, indicating strong memory and coordination under pressure.

## SI 2 Sample 1

ST: "Let me start with some good news. Inflation is in retreat. From 5.7% in the fourth quarter of last year, our World Economic Outlook sees global inflation falling to 5.3% in the current quarter and further to 3.5% in the fourth quarter of 2025, with a faster decline in advanced economies".

TT:

"دعوني أبدأ ببعض الأخبار الجيدة، إن التضخم هو في تراجع من نسبة 5.7% في الربع الأخير من العام الماضي. إن التضخم نراه نزل إلى نسبة 5.3% في الربع الحالي وسوف يستمر إلى 3.5% في الربع ال... الحالي من عام 2025."

## Gile's Effort Model

The interpreter delivered the message clearly, capturing the downward trend in global inflation and accurately rendering key commercial figures such as 5.7%, 5.3%, and 3.5%. The overall structure followed the original sequence, maintaining logical progression and coherence. However, a slight hesitation occurred at the end when expressing "عام من الحالي الربع"

"،2025 creating momentary disruption in fluency, though it did not obscure the intended meaning, and it adhered to all elements of the model.

## SI 2 Sample 2

ST: "Even if inflation is coming down, the new and higher price levels are here to stay. Families are hurting. And looking ahead, the world now faces a low growth, high debt trajectory. We project global GDP to grow at an average rate of 3.2% per year over the next five years".

TT:

"حتى لو أن التضخم في نزول، فإن الأسعار الجديدة والمرتفعة قد جاءت وسوف تبقى. العوائل بدأت تتأذى، وبالنظر إلى المستقبل فإن العالم الآن يواجه مساراً من النمو البطيء والديون العالية. نحن نتوقع أن إجمالي الناتج المحلي سوف يزداد بنسبة 3.2% لكل سنة خلال السنوات الخمس القادمة".

## Gile's Effort Model

The interpreter conveyed the message with strong listening and analysis performance, accurately reflecting the contrast between decreasing inflation and persistent price levels. The economic and commercial terminology, such as "البطيء" and "النمو" was well-rendered. The progression toward a projected 3.2% GDP growth over five years was clearly expressed, with the figures correctly interpreted. The segment maintained a steady pace and tone suitable for the content.

## SI 2 Sample 3

ST: "Just look at how our forecasts have been revised lower and lower over the years. At the same time, we forecast global public debt to keep rising, with a risk that it could exceed our baseline projection by as much as 20% of world GDP in a severe but plausible negative scenario".

TT:

"شاهدوا كيف أن توقعاتنا أثبتت بأنها أدنى مما توقعنا عبر السنين. في نفس الوقت فنحن توقعنا بأن المديونية العالمية سوف تستمر بالارتفاع، مع وجود مخاطر بأنها قد تتجاوز توقعاتنا أو أن... تتجاوز ما توقعنا. بنسبة 20% من إجمالي الناتج المحلي في سيناريو قاسي أو شديد ولكن في نفس الوقت واقعي".

Gile's Effort Model

The interpreter showed solid comprehension of the message, especially the notion of declining forecasts and rising global debt. However, there was slight redundancy in the phrasing around the risk exceeding expectations

hesitation some suggests which")، بأنها قد تتجاوز توقعاتنا أو أن... تتجاوز ما توقعنا") or self-correction in formulation. Despite that, the financial and commercial terminology, particularly "العالمية المديونية" and "20%"، "إجمالي من المحلي الناتج"، was accurately rendered, and the interpretation retained the severity and realism of the negative scenario.

S13 Sample 1

ST: "The title of this session this afternoon is Focusing on Sustainable and Inclusive Trade in the Region. This session is especially important to me, both as the chair of the meeting and as the United States Trade Representative. As many of you know, over the years and over the last two years, the United States has been engaged in a fundamental reorientation of the way that we think and approach trade policy".

"عنوان جلستنا لهذا المساء هو التركيز على التجارة الشاملة المستدامة في المنطقة. هذه الجلسة مهمة للغاية بالنسبة لي، حيث أن TT: كلاهما رئيس الهيئة وأيضا ممثل عن تجارة الولايات المتحدة الأمريكية، كما تعلمون على مدى سنوات العدة وايضا على السنتين الأخيرتين، إن الولايات المتحدة كانت منخرطة في العديد من السياسات التجارية المختلفة".

Gile's Effort Model

The interpreter faces noticeable difficulties in coordination and memory, leading to overlapping roles ("كلاهما رئيس الهيئة وأيضا ممثل") and a somewhat muddled structure. While the core idea of sustainable and inclusive trade is captured, the delivery shows signs of divided attention. The listening and analysis effort is partially successful; some main points are grasped, but "fundamental reorientation" and the

restructuring of trade policy are not conveyed. Production effort suffers from awkward phrasing and loss of clarity in the role description.

S13 Sample 2

ST: "From our conversations, I know that many of us share a common understanding on the limits of the current version of globalization today. The traditional approach to trade prioritized a very aggressive liberalization and tariff elimination. This approach has certainly produced benefits, massive increases in economic activity and growth, but we also know that the focus on maximum efficiency has had significant costs and consequences".

TT:

"العديد منها اليوم هي اليوم تعتبر من السياسات التجارية المختلفة، العديد منا يتشارك اليوم نظرة حول ما هي اليوم نظرة العولمة اليوم حيث أن المنحنة المرسوم للتجارة والذي يعطي أولوية للعولمة المختلفة لدخول هذا السوق. إن هذا طبعاً أكيد أن هذا السوق هو مهم للغاية لإعطاء مختلف النتائج المختلفة لنشاطات اقتصادية ونمو اقتصادي لكن نعرف أن اليوم العواقب الموجودة".

Gile's Effort Model

The interpreter experiences notable strain in listening and analysis as well as production. The ideas are jumbled, and coherence is disrupted by vague or circular phrasing like "السياسات التجارية المختلفة" and "العولمة المختلفة لدخول هذا السوق". The core concept of aggressive liberalization and its dual effect, economic benefit and resulting consequences, is not clearly processed or rendered. Memory and coordination effort are strained, reflected in repetitive structures and loss of logical sequencing. Overall, the rendering shows effort but lacks effective delivery of key commercial and economic content.

S13 Sample 3

ST: "Prosperity without inclusiveness has contributed to rising inequality and wealth concentration. In addition, we all have experienced firsthand how dispersed and fragile our supply chains are and the realities of a worsening climate crisis. It is clear today that we must adapt to the realities of the global economy. That is why from day one, the United States has been using trade to implement President Biden's vision to grow our economy from the bottom up and from the middle out".

"لربما تؤثر أيضاً على العديد من وربما من الازدهار والنمو لا يحدثان بدون أي شمولية بل يتيان من التركيز على الجودة وتركيز TT: على النمو. بالإضافة للخبرة التي تمتلكها جميعاً بمعرفة كيف... كيف يمكن اليوم الضعف الموجود بسلسلة التوريد الخاصة وأيضاً بنفس الوقت الأزمات المناخية المختلفة حول العالم. اليوم يجب أن نعي إلى أنه أزمة الاقتصاد العالمية موجودة ويجب اليوم أن نقوم بموآنتها. ولهذا اليوم من اليوم الأول تستخدم الولايات المتحدة الأمريكية بنفس الوقت نظرة الرئيس الأمريكي بايدن لنمو اقتصادنا الأمريكي من الوسط إلى الأعلى وأيضاً إلى الخارج."

#### Gile's Effort Model

The interpreter struggled significantly with the Listening and Analysis Effort. Key commercial and economic ideas such as "prosperity without inclusiveness" and the link to "rising inequality and wealth concentration" were either dropped or vaguely rendered as "لربما من الازدهار والنمو لا يحدثان بدون أي شمولية" without clarifying the cause-and-effect relationship. Production was marked by hesitation, self-correction, and vague expressions ("بنفس الوقت", "لربما", "الجودة") that reveal high cognitive load. The Memory Effort also appears taxed, leading to fragmented delivery and missed connections between supply chain fragility, climate crisis, and economic strategy. Coordination across segments lacks flow, weakening the delivery of the core message.

Table 2. Comparative Performance of The Interpreters Based on Gile's Effort Model

Interpreter	Listening and Analysis	Production Effort	Memory Effort	Coordination Effort
SI 1	% 68	% 60	% 72	% 84
SI 2	% 80	% 80	% 84	% 88
SI 3	% 20	% 28	% 16	% 20

#### 7. Conclusion

This empirical study investigated the influence of subject-matter knowledge on simultaneous interpreting performance using Gile's Effort Model as the sole analytical framework. The performance evaluation using Gile's Effort Model revealed clear variation across the three interpreters, each demonstrating distinct strengths, weaknesses, and delivery tendencies.

SI2 emerged as the most competent interpreter overall, consistently achieving 80% or higher across all four Effort components. The interpreter showed superior comprehension of the source material, accurate terminology rendering, and strong memory retention. Coordination was smooth and uninterrupted, reflecting excellent management of listening, analysis, and production under pressure. This performance indicates strong subject-matter familiarity and efficient cognitive resource allocation.

SI1 ranked second, performing steadily across all Efforts, particularly in coordination (84%) and memory (72%). While production and listening scores were slightly lower than SI2's, SI1's delivery was consistently clear, fluent, and confidently paced. The interpreter's ability to maintain audibility and clarity throughout segments ensured communicative effectiveness, especially within commercially and financially dense discourse. Despite minor lexical hesitation in a few instances, SI1 demonstrated a solid grasp of the source message and maintained real-time responsiveness qualities that make the interpretation reliable and professional.

SI3, on the other hand, displayed significantly lower performance levels, with 20% in Listening & Analysis, 28% in Production, 16% in Memory, and 20% in Coordination Effort. These figures reveal major comprehension and cognitive management challenges. While SI3's delivery was fluent and confident, this fluency masked substantial gaps in understanding and message accuracy. The interpreter's output often included omissions and generalizations, indicating strain in processing and retaining complex commercial terminology. Although SI3's rapid delivery suggested experience in simultaneous interpreting, the lack of accuracy and completeness ultimately compromised message fidelity.

Collectively, these findings highlight that strong delivery and fluency (as seen in SI3) cannot compensate for poor comprehension, and that true interpreting quality relies on a balance of cognitive control, content accuracy, and terminological precision. SI2 demonstrated the highest overall competence, followed by SI1, both of whom managed cognitive strain efficiently, while SI3's results underscore the negative impact of insufficient subject-matter familiarity on real-time performance.

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## التحليل التجريبي للمعرفة التخصصية في الترجمة الفورية

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الكلمات المفتاحية: الترجمة، العبي الادراكي، الجودة

### الملخص:

تكمن أهمية المعرفة التخصصية في نجاح عملية الترجمة الفورية ضمن السياقات التجارية والمؤسسية، إذ تسهم هذه العملية في تسهيل تبادل المعلومات والأفكار في الوقت الحقيقي بين الأطراف المعنية. تهدف هذه الدراسة إلى استكشاف تأثير المعرفة المتخصصة في المجال التجاري على جودة الأداء في الترجمة الفورية، وكيف تنعكس على المقاييس الأساسية للأداء مثل الدقة، والإتمام، والتنسيق. اعتمد البحث على نموذج الجهد لجيل (Gile, 1995) كأداة تحليلية رئيسية لتقييم أداء مترجمين فوريين اثنين من خلال ست عينات تجريبية مختارة بعناية ضمن دراسة تطبيقية. استخدم الباحث المنهج الكيفي لتحليل النتائج من خلال جداول مقارنة منظمة بين المترجمين، تبين من خلالها أوجه القوة والقصور في الأداء. أظهرت النتائج أن المعرفة التخصصية بالمجال التجاري هي العامل الرئيس في تحقيق ترجمة فورية ناجحة، إذ أظهر المترجمون الذين يمتلكون معرفة أعمق بالمجال أداءً أفضل في الاستماع والتحليل، وإنتاجاً أكثر دقة، وتنسيقاً أعلى بين الجهود المختلفة. في المقابل، أدى غياب المعرفة المتخصصة إلى ظهور حالات حذف لغوي واستخدام لغة عامة وضعف في نقل الرسالة. تدعم هذه النتائج الفرضية التي تؤكد أن المعرفة التخصصية تعزز جودة الترجمة الفورية بشكل عام، وينبغي أن تكون عنصراً أساسياً في برامج تدريب المترجمين الفوريين.