

Analysis of Instant Information Processing and Language Recombination Techniques in Interpretation Practice

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Abstract. In global cross linguistic communication, the real-time nature of interpreting determines that its quality core relies on the real-time information processing and language recombination abilities of practitioners. The synergy between the two is the key to avoiding communication deviations and ensuring accurate semantic transmission. This article is supported by the cognitive theory and practical experience of interpreting, focusing on the core logic of both, sorting out the key links of information processing such as listening, decoding, screening, and storage, dismantling language restructuring techniques such as word order adjustment, semantic integration, and cultural adaptation, analyzing collaborative difficulties such as cognitive overload and information fragmentation, and proposing coping strategies. Research has shown that instant information processing should be guided by core semantic capture, and language recombination should be in line with target language habits and scene requirements, forming a "precision processing adaptation recombination" loop; Through scientific training, scenario based corpus accumulation, and retrospective optimization, practitioners' abilities can be effectively enhanced, providing support for various interpreting practices and helping to improve the fluency and accuracy of cross language communication.

Keywords: Interpretation, instant information processing, language restructuring, interpretation skills, cognitive load, semantic transmission.

1. Introduction

With the deepening of globalization, interpretation has become the core communication link in cross linguistic scenarios such as diplomacy, business, and academia. Its real-time, on-site, and irreversible characteristics impose strict requirements on practitioners' comprehensive abilities. The essence of interpreting is "real-time cross linguistic information transmission", which requires the completion of a closed loop of "source language input processing target language output". The timeliness of instant information processing and the adaptability of language recombination are the core variables that determine the quality of interpreting. If information processing cannot quickly screen core meanings, avoid redundancy, or language recombination deviates from the logic of the target language and ignores semantic accuracy, it can easily lead to communication deviation, information distortion, and affect the communication goals of the scene.

Existing interpreting research mostly focuses on single link techniques or pure academic theoretical analysis, with insufficient exploration of their collaborative logic, practical adaptability, and scenario based techniques, making it difficult to meet the practical needs of practitioners. Based on practical experience, most interpreting errors are not due to language proficiency, but rather to low information processing efficiency, imbalanced recombination logic, resulting in missing core information, stuttering expression, or semantic deviation [1]. Based on this, this article is supported by Seleskovic's theory of interpretation and cognitive load theory of interpretation, combined with the rules of multi scenario practice, to systematically explore the core connotations, key links, practical skills, and collaborative difficulties of the two, and propose practical improvement strategies to optimize practical methods and reduce error rates for practitioners. At the same time, it provides practical guidance for the cultivation of core abilities in interpretation teaching, and helps fill the gap between theory and practice.

2. The Core Connotation of Instant Information Processing and Language Recombination in Interpretation

The immediacy of interpreting determines that information processing and language restructuring need to be dynamically adapted synchronously, and are not independent links, forming a linkage relationship of "processing first, then restructuring, and restructuring feedback processing". The core connotation is in line with the cognitive logic of interpreting, the essence of information transmission, and the need for immediacy.

From the perspective of instant message processing, the core is to efficiently decode and retain source language information within a limited time. Unlike written language, which can be repeatedly read, the source language of interpreting is instantaneous and fluid, and is also affected by accent, speed, and information density. Therefore, it is necessary to break through the "word for word reception" and focus on "semantic understanding+core screening" [2], including three dimensions: first, listening and decoding, quickly capturing speech and vocabulary information, and combining contextual inference. For example, in business interpreting, "this cooperation needs to complete qualification docking before Q3" is interpreted as "cooperation needs to complete qualification review docking before Q3"; The second is information filtering, which eliminates redundancy according to scene priority, leaving the subject, time, and key demands, such as simplifying the preparation for academic conference interpretation and focusing on research conclusions and data; The third is short-term storage, which retains core information through "semantic modules" and avoids cognitive overload through working memory. Seleskovic's interpretive theory "breaks away from the shell of the source language and conveys deep semantics", providing authoritative support for this logic.

From the perspective of language restructuring, the core is to "accurately understand the semantics of the source language and complete adaptation and reconstruction according to the habits of the target language". The goal is for the receiver to understand without ambiguity and quickly, without word for word conversion, following two principles: first, semantic conservation, retaining all core semantics, such as in Chinese English interpretation "China is willing to deepen economic and trade cooperation with all parties to achieve mutual benefit and win-win results", not simply "China is willing to cooperate with all parties"; The second is target language adaptation, which conforms to word order, expression, and culture. For example, in Chinese, "We have formulated a detailed plan for the advancement of this project" is reorganized into English as "We have formulated a detailed plan for the advancement of this project". And the reorganization is pushed forward in real-time, synchronized with information processing, avoiding memory forgetting and lagging, forming a "understanding reconstruction" closed loop [3].

In summary, instant information processing is a prerequisite for language restructuring, with precision in attributive meanings; Language recombination is a carrier of information transmission, with a fixed transmission efficiency. The two together form the core of instant semantic transformation in interpreting, which essentially revolves around "efficient and accurate transmission of cross linguistic information" and meets practical needs.

3. Key links and practical points of instant information processing in interpreting

Instant information processing is the "input core" of interpreting, which requires completing the "listening screening storage" process in the instantaneous flow of the source language, avoiding omissions and misunderstandings, and ensuring accurate language recombination. Combining practice and cognitive theory, the key steps are auditory decoding, core information screening, and short-term semantic storage. Each step should adapt to scene interference and efficiency requirements.

Listening and decoding is the first step, with the core of "breaking through speech interference and accurately grasping the semantic meaning of the source language", taking into account speed and

accuracy, and dealing with accent, speed, and terminology interference. In practice, it is important to focus on logical semantics rather than word for word reception: most speakers speak quickly and colloquially, using conjunctions and tone to emphasize logical reasoning, such as emphasizing the logical chain of "complex situation - rise of unilateralism - support of multilateralism - protection of industrial chain stability" in diplomatic translation; Secondly, it is necessary to adapt to scene interference: in case of accent differences, understand the background in advance and focus on the core words for listening and recognition; Reserve in advance for scenarios with dense terminology, such as medical interpretation where corresponding expressions are needed for "clinical efficacy" and "targeted therapy"; In addition, proactive prediction can be made, such as predicting the amount and payment method when negotiating a "quotation" in business negotiations [4].

Core information screening is the core process aimed at "eliminating redundancy and retaining key semantics". According to the "priority sorting", capture three types of information: first, subject action target, such as business interpretation "We will visit your company next month for inspection and negotiation, and promote the implementation of the project"; The second is key constraints such as time and quantity, such as "delivering the first batch of goods before the end of 2024 and meeting industry standards", without missing "the end of 2024" and "the first batch"; The third is logical correlation information, ensuring the coherence of the reorganization, such as "the project lags behind but the optimized process can be completed on schedule". At the same time, filter the scale according to the scene, leave research details for academic interpretation, and lay a brief foundation for daily interpretation [5].

Short term semantic storage is the concluding step, with the core being 'stabilizing core information until recombination is completed'. In practice, it is necessary to store in a "semantic module", such as "Party A submits qualifications on July 15th → Party B reviews within 3 days → signs the agreement", to reduce memory burden based on logic; Secondly, immediate retelling and reinforcement are necessary, silently reciting "subject action time"; In addition, do not dwell on non core details, prioritize the core and complete or simplify it later.

In summary, the three links are interrelated, and in practice, it is necessary to focus on semantic logic, adapt scene optimization methods, balance accuracy, and provide stable support for language recombination.

4. Core Techniques and Application Logic of Language Recombination in Interpretation

Language recombination is the "output core" of interpreting, which needs to be based on the deep semantics of the source language, adapted and reconstructed according to the habits of the target language receiver, balancing accuracy and fluency. The core follows the principle of "semantic conservation and target language adaptation". Based on the practice of Chinese English interpretation, the core techniques can be summarized into four categories: word order adjustment, semantic integration, redundant deletion, and cultural adaptation, which require flexible adaptation to different scenarios.

Word order adjustment is the foundation, with the core being to adapt to the target language's word order and avoid literal translation being rigid. In Chinese, there are often "topic prepositions" and "attributive prepositions", while in English, there is a focus on "subject verb object order" and "attributive prepositions", which need to be adjusted accordingly. For example, in Chinese, "We have sorted out the holding process of this academic forum" is reorganized as "We have sorted out the holding process of this academic forum"; Change 'experienced interpreters' to 'interpreters with rich experience'. The adverbials of time and place in Chinese are often placed at the end of sentences to ensure natural expression [6].

Semantic integration is the core, aiming to connect fragmented information and enhance coherence. Use conjunctions to reinforce the logic, such as "Party A delays delivery → Party B claims compensation → reaches a compensation plan through negotiation", integrated into "Due to Party A's

delay in delivery, Party B claims compensation, and ultimately both parties reach a compensation plan" (the same applies in Chinese and English); When there is a hierarchy of information, highlight the core, such as academic interpretation prioritizing the presentation of research conclusions.

Redundancy reduction is optimization, with the core being to eliminate source language redundancy and improve efficiency. Three types of content can be focused on: repetitive semantics (such as "valuing cooperation, paying attention to cooperation" simplified as "valuing cooperation"), colloquial filler words (excluding Chinese "um", "actually", English "well", etc.), and irrelevant foreshadowing (such as business weather greetings simplified as "discussing cooperation next"), with deletion based on the premise of not losing core semantics.

Cultural adaptation is a supplement aimed at avoiding cross-cultural misunderstandings. Cultural specific expressions need to be transformed, for example, the Chinese phrase "adding unnecessary details to a snake" is reorganized into the English phrase "give the lily"; Adapting to the cultural habits of the target language, such as changing "please give me more guidance" to "please give me more guidance", politely refusing to balance clarity and politeness.

In summary, word order adjustment ensures compliance, semantic integration ensures coherence, redundant deletion ensures efficiency, and cultural adaptation ensures adaptability. Four types of skills need to be flexibly combined with language differences and scenarios to achieve precise and fluent target language on the basis of semantic conservation [7].

5. The Collaborative Difficulties and Breakthrough Path of Instant Information Processing and Language Recombination

The key links of instant information processing and the core techniques of language recombination have been analyzed separately in the previous text, and the synchronous dynamic adaptation of the two is the core to ensure smooth and accurate interpretation. As the core linkage link of interpretation, the synergy between the two is easily affected by cognitive load, information characteristics, language ability and other factors, which can lead to three core difficulties: cognitive load overload, source language information fragmentation, and target language expression lag. Targeted breakthroughs are needed to optimize the synergy efficiency.

Cognitive overload is the primary challenge, stemming from the synchronous occupation of working memory by both, exceeding the carrying capacity limit. In interpreting, when the source language flows instantly, information is dense, speech is fast, or terminology is unfamiliar, it is easy to encounter problems such as listening omissions and stuttering in recombination. For example, when two parties in a business negotiation quickly confront each other, it is easy to forget key data due to memory competition. Breakthrough path: One is to enhance multitasking capabilities through "shadow training+real-time restructuring"; The second is to optimize information processing, prioritize capturing the core modules of "subject action key limitation", and streamline memory burden; The third is to anticipate the scenario and speaker logic in advance, reducing immediate cognitive consumption.

The fragmentation of source language information is manifested as scattered information logic and jumping expressions, such as the speaker switching topics casually in daily accompanying interpreting, or information fragmentation caused by accent and noise interference, which increases the difficulty of processing and restructuring [8]. Breakthrough path: Firstly, enhance the ability to extract logic by integrating scattered information into logical modules through tone stress and conjunctions; The second is to rely on context to complete missing information and avoid recombination breakage; The third is to guide the spokesperson to focus on the core when the scene allows, while strengthening their ability to process fragmented information in formal scenes.

The lag in target language expression is due to insufficient vocabulary reserve and unskilled recombination skills, resulting in delayed output and stiff expression, such as grammar errors caused by untimely adjustment of word order in Chinese English interpretation. Breakthrough path: Firstly, accumulate high-frequency corpus and sentence structures according to the scene, reducing the time

for vocabulary deliberation; The second is specialized training in word order adjustment, semantic integration, and other skills to form muscle memory; The third is to improve output speed and compress reaction time through "timed real-time recombination" training [9].

In summary, the three types of difficulties are essentially related to "semantic grasping accuracy, cognitive adaptation, and recombination proficiency". Targeted training is needed to enhance abilities, optimize practical processes, prepare in advance based on scenarios, reduce immediate collaboration pressure, and achieve efficient linkage between the two.

6. Practical strategies for enhancing the real-time information processing and language restructuring abilities in interpreting

To address the collaborative challenges of cognitive overload, fragmented source language information, and lagging target language expression mentioned earlier, it is necessary to establish a closed-loop model of 'theoretical learning+specialized training+corpus accumulation+practical review+scenario preparation' to enhance instant information processing and language recombination capabilities. This model should balance scientificity and practicality, and accurately address practical pain points.

One is to solidify the theoretical foundation. Systematically study core cognitive theories such as interpretive theory and cognitive load theory, read authoritative works such as "Interpretation Theory and Practice" and "Interpretive School Interpretation and Translation Theory", grasp the logic of "semantic priority" and "rational allocation of cognitive resources", avoid mechanical literal translation, and provide theoretical support for ability improvement.

The second is to carry out targeted training. Focusing on core processes such as auditory discrimination screening, semantic storage, and word order adjustment, three types of specialized training are designed: auditory discrimination screening training focuses on quickly grasping core semantics; Language restructuring training strengthens word order adaptation and semantic integration skills; Collaborative training adopts the "real-time listening and recognition+synchronous recombination" mode, following the principle of easy to difficult, to cultivate parallel processing ability.

The third is to accumulate contextualized language materials. Build a personal corpus based on diplomatic, business, academic, and other scenarios, reserve high-frequency terms, commonly used sentence structures, and culturally appropriate expressions, regularly update and supplement them, reduce the time spent on vocabulary consideration during real-time restructuring, and improve expression adaptability and fluency.

The fourth is to strengthen practical review. After each practice, conduct a review from three aspects: error sorting, method optimization, and summary of high-quality cases. Accurately identify problems such as listening, omission, and rigid reorganization [10], formulate improvement measures, extract reusable experience, and form a personal practice guide to avoid repeated mistakes.

Fifth, prepare the scene well. Investigate the theme of the scene, background of the participants and core issues in advance, predict interference factors such as accent and noise, prepare corresponding corpus and tools, reduce the pressure of immediate collaboration, and lay the foundation for efficient processing and restructuring.

In summary, through the closed-loop improvement mode, the processing accuracy, recombination adaptability, and collaborative efficiency of the two can be gradually optimized to meet the real-time and precision requirements of interpreting, and to help practitioners steadily improve their core abilities.

7. Conclusion

In global cross linguistic communication, interpretation serves as the core link, and its real-time and on-site characteristics determine that instant information processing and language recombination

are the core capabilities to ensure the quality of interpretation. The previous text has systematically sorted out the core connotations, key links, recombination techniques, and collaborative difficulties of the two, clarifying the collaborative logic of 'precision processing adaptation recombination'. Based on this, the core conclusions and practical inspirations can be summarized as follows: the two form a collaborative relationship of 'precision processing as the basis, adaptation recombination as the pulse' - the former determines the accuracy of semantic transmission, while the latter affects the effectiveness of information output. The collaborative efficiency of the two directly affects the fluency and accuracy of cross linguistic communication.

Through system analysis, it can be concluded that instant information processing needs to break through the misconception of "word for word reception", focusing on listening and decoding to grasp logic, core screening to retain key information, and short-term storage to stabilize modules, relying on interpretive theory to focus on deep semantics; Language recombination should adhere to the principles of "semantic conservation" and "target language adaptation", and achieve compliance, coherence, and efficiency in target language expression through four techniques: word order adjustment, semantic integration, redundancy reduction, and cultural adaptation. The core difficulty of the collaboration between the two lies in the proficiency of cognitive adaptation, logical sorting, and reorganization, which requires a closed-loop breakthrough through scientific training, corpus accumulation, practical review, and scene preparation.

From a practical value perspective, this study provides a clear path for interpreting practitioners: it is necessary to establish the concept of "semantic priority, collaborative adaptation", abandon mechanical literal translation, strengthen multi task processing ability through specialized training, and rely on scenario based corpus and review optimization ability; For translator teaching, it is necessary to weaken single link training, strengthen the collaborative logic cultivation of the two, and fill the gap in the adaptation between theory and practice.

In the future, intelligent interpreting assistance tools can be further combined to explore "human-machine collaboration" to improve processing and restructuring efficiency, or to conduct segmented research for small languages and special scenarios (such as emergency interpreting), continuously enriching the practical achievements of interpreting core competency training, and better supporting efficient cross linguistic communication in the context of globalization.

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