

# 口译经验与工作记忆的双向关系

## ——相关实证文献述评

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### 摘要

工作记忆对口译认知资源分配具有重要作用。大量的语言控制、加工控制和语境控制可能强化译员的工作记忆系统。本文梳理了学界对于口译员工作记忆优势假设的证实和证伪,总结了相关的横向研究、纵向研究、系统回顾和荟萃分析,讨论了已有的研究对象、方法设计、工具变量、研究发现等内容。梳理发现了工作记忆与口译经验之间塑造与被塑造关系,挖掘了影响口译员工作记忆优势出现的语言和非语言经验调节因素,并对未来研究提出了建议。译员工作记忆优势的相关研究不仅对于口译认知理论、实践、教学具有建构意义,且有助于探讨译员群体的认知发展、认知储备、认知衰退等议题。

### 关键词

口译经验, 工作记忆, 优势效应, 调节因素

# The Two-Way Relationship between Interpreting Experience and Working Memory

## —A Review of Empirical Evidence

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### Abstract

Working memory plays an important role in the allocation of attentional resources for language

interpreters. Frequent language, processing and contextual control may strengthen the interpreter's working memory system. This article aims to review the verification and falsification of the interpreter's working memory advantage hypothesis by summarizing related cross-sectional and longitudinal research, systematic reviews and meta-analyses. The research scope, designs, methods, materials, variables, and findings of existing literature were discussed. The overall conclusion points to how interpreting experience can shape and be shaped by superior working memory, although the emergence of interpreters' memory advantages is moderated by various linguistic and non-linguistic factors. Suggestions for future research have been made. This line of research not only has constructive significance for the theory, practice, and pedagogy of interpreting as a cognitive process, but also sheds light on broader issues, such as the cognitive development, reserve and decline of language interpreters.

## Keywords

Interpreting Experience, Cognitive Control, Superiority Effects, Moderating Factors

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## 1. 引言

在口译研究领域, 颇有影响力的巴德利工作记忆模型[1] [2] [3], 包括4大子系统: ①语音回路(负责语音存储和默读演练); ②视觉-空间画板(存储和演练视觉和空间信息); ③中央执行器(执行控制); 以及④情景缓冲区(连接长期记忆以缓存信息) [2]。因此, 在口译研究中, 工作记忆被定义为“负责信息短期储存、维护和加工, 以及对整个认知过程进行管控和协调的机制” ([4], p. 443)。

## 2. 口译中的工作记忆

作为即时和即席双语任务, 口译的认知过程具有目标性、复杂性、动态性和持续性。认知补充要求高[5], 认知负荷大[6], 好比“走钢丝” [7], 需要协调精力分配[8] [9], 因而认知加工(cognitive processing)是口译研究的核心范式([10], p. 78-82)。在口译经验的各个阶段, 口译员能在语言控制、加工控制和语境控制三大领域锻炼工作记忆系统。

首先, 与一般双语经验不同, 口译时两种语言均被高度激活, 译员在双语之间频繁转换, 需要持续抑制无关语码干扰[11] [12] [13] [14]。口译员的工作语言能力要求大于普通双语者, 陈雪梅([15], p. 34)对此指出, “口译工作语言能力 = 母语和外语能力 + 领域语言运用能力 + 快速语码转换能力 + 克服中际语不稳定性能力。” 卢信超、李德凤和李丽青[16]在对职业译员的调查中也发现语言是译员最重要的能力素养。因此, “语言控制”是口译工作记忆的第一大任务。

其次, 口译涉及并行加工。感知、分析、理解、记忆、转换、表达、协调、监控或修正等多个任务叠加。虽然交传笔记中有短暂的听/记间隔(EPS: ear-pen-span) [17], 同传中也有听/说间隔(EVS: ear-voice-span) [18], 但是口译加工的时间压力是共识[19]; 译员在同传时约有70%左右的并行加工[20]; 工作记忆显著影响译员的流畅性[21]; 再者, 译员还要调节译前的认知负荷: 即准备性、策略性的信息加工[22] [23]。以突破译员在工作记忆上的容量限制[24] [25]。因此, “加工控制”是口译工作记忆的第二大任务。

第三,在交际语境的多条路径中,译员需要按照“最小最大策略”选择最小努力和最大效果的话语行为([26], p. 48)。同时,社会历史文化和意识形态立场也影响着高度语境化的口译话语实践[27] [28]。一方面,译员对自身角色的伦理感知具有社会性和历史性[29];另一方面,译介话语与译员语境具有构建与被构建的关系[30] [31] [32],其中“一带一路”等重要政治话语的译介和传播常伴随着语境重构[33],这将进一步增加译员的语境控制成本。因此,“语境控制”是口译工作记忆的第三大任务。

### 3. 口译经验能否提升工作记忆?

口译活动对译员记忆的巨大挑战以及口译培训中大量与记忆相关的练习可能形成译员的工作记忆优势[34] [35]。按照研究时间顺序,以下学者在不同程度上证实了口译工作记忆优势,但部分初期研究存在样本过小和年龄差异过大的缺憾。

[36]发现译员(11名职业译员和11名学生译员)在数字广度、阅读广度和有发音抑制的自由回忆上优于非译员(两个11人的对照组),但在无发音抑制的自由回忆方面无优势。[37]发现尽管专业译员年龄最大(平均48.5岁~13名,下同),认知退化可能性最高,但他们在母语和二语的词汇广度和口语广度以及二语阅读广度的任务上都优于双语学生(21.1岁~39名)和教师(43.5岁~15名)。[38]发现学生译员(26.2岁~18名)在听力广度、自由回忆(有发音抑制)和类别探测任务上优于职业译员(44.4岁~21名)和两个非译员对照组(21.5岁~20名,和44.7岁~20名),职业译员仅在发音抑制的自由回忆中优于两个非译员组。[39]发现译员(年轻组34.5岁~12名;资深组56.2岁~13名)在阅读广度和非词重复上优于对照组(31.8岁~11名和63.6岁~11名),但在线索回忆上没有优势;年轻译员在非词重复和线索回忆上表现最佳。[40]发现专业译员(39.3岁~23名)的语言广度和空间记忆广度优于多语组(34.1岁~21名)。[41]发现受训(2年)后学生译员(24岁~20名)的阅读广度和听力广度优于双语学生(24岁~24名),但受训前(22岁)与对照组无差异。职业译员(38岁~24名)相较于受训前的学生译员和双语组有微弱优势,但与受训后的学生译员无差异。[42]发现训练(1年)显著改进了口译学员(22.2岁~17名)和笔译学员(23.1岁~21人)的阅读广度,但并未改进数字广度,且口译和笔译无显著组差;职业译员(52.7岁~21名)在阅读广度上显著优于受训前的笔译学员,但与受训前后的口译学员无差异。

也有证据不支持译员的记忆优势或是口译训练对记忆的提升效应。限于篇幅,以下将不再列举研究样本和被试年龄,着重呈现结论差异。例如,[43]发现口译学生(约100小时训练量)和双语学生在母语和二语的数字广度上都没有显著差异。[44]发现职业译员的口译表现优于学生译员,但是听力广度无差异。[45]发现译员的发音抑制记忆优势源于特定领域的单词知识,与工作记忆存储容量或协调能力无关。[19]测试了口译和英专学生在训练前后(本科,4个月)的工作记忆,并未发现口译训练能够提升学生译员的听力和字母广度。[46]发现在受训前口译专业、翻译专业和跨文化专业的三组研究生的数字广度没有差异。

此外,在手语口译方面,[47]发现两年的学习并未增加学生译员的阅读广度,但是倒数的数字广度显著增加;她们认为前者代表工作记忆的存储和加工(storage and processing),而后者代表工作记忆的协调和转化(coordination and transformation)。

### 4. 工作记忆能否预测口译表现?

相关前期文献主要集中在口译经验能否带来工作记忆优势,仅有少数研究关注了两者关系的另一个重要维度:即工作记忆优势是否能够预测口译表现。例如,[48]发现工作记忆容量能够显著预测一年前、后的本科交传口译成绩;但逐步回归分析发现,在除去前测成绩影响之后,只有二语水平对后测成绩的改善仍有贡献,而工作记忆则没有。[49]使用多元线性回归模型发现,同传经验(每月同传天数)和工作记忆(发音抑制下的听力广度)能够显著解释49.8%的同传成绩变化,但同传经验的解释力大于工作记忆。[41]

发现工作记忆容量更高的学生口译成绩更高,且两年期间工作记忆提升更多的学生在期末考试中表现更好。[21]发现工作记忆表现可以显著预测学生译员在中英和英中两个方向上的口译流利程度;[50]也发现在口译训练前,工作记忆(二语听力广度)和更新效率(n-back 反应时)能够解释 48.3%的期末口译成绩变化,但一年后两个指标的解释力度降至 35.6%,前测时解释力更强的变量是更新效率;后测时解释力更强的是听力广度。在手语同传方面,[51]并未发现 31 名职业手语译员的同传表现和工作记忆广度显著相关;但是[52]发现工作记忆表现能够显著预测培训前和培训后的学生译员的手语同传表现。

综上,译员工作记忆优势的前期研究较为丰富,但不少研究得出了混合性结果,导致定性梳理无法得出一致结论[53]。不过,该领域已经出现了足够的复制研究可以进行定量的荟萃分析(meta-analysis)[54]。目前已有的两项荟萃分析都支持译员的工作记忆优势。1) [55]截止于 2016 年 12 月的荟萃分析发现了工作记忆容量和职业译员表现之间显著正相关以及职业译员组的显著记忆优势。2) [56]截止日期于 2018 年 10 月 30 日的荟萃分析也发现译员组的工作记忆显著优于对照组。([55], p. 179)发现职业译员在短期记忆和工作记忆上的显著差异效应量达到了 0.685 和 0.645 ([56], p. 8),也发现了显著的优势效应量(短期记忆 0.592 和工作记忆 0.707)。

## 5. 当前研究的不足和问题

当前研究的主要问题是关于译员工作记忆优势的研究结论存在不一致性。除了前期研究样本过小的问题之外,造成译员工作记忆优势混合结果的主要原因是 1) 译员被试的异质性、2) 实验任务的多样性和 3) 口译经验和任务类型之间的交互效应。实验设计中对这些因素考虑不足导致了前期研究结果的不一致性。

1) 译员被试的异质性。首先,由于工作记忆是一般性和特殊性兼具的心理过程,所以年龄大小[57]、社会经济地位[58] [59]、运动[60]、职业[61]等人口因素会影响被试的工作记忆表现,因此,译员被试的人口因素必须得到严格控制。其次,口译员至少都是双语者。按照适应控制假设(adaptive control hypothesis)[62]和控制剂量假设(control dosage hypothesis)[63],双语者工作记忆的调用程度与适应需求相关,即需求越大,使用越多,形成优势的可能性越大。大量高水平控制比少量低水平控制更有助于提升工作记忆。因此,译员的二语水平[64]、转换频率[65]等因素会影响工作记忆表现,也是实验中必须进行严格控制的因素。在口译经验方面,虽然口译经验与口译水平并非完全等同的概念[65],但是目前工作记忆的相关研究基本上是用口译经验来代替口译水平[54]。[56]发现,口译初学者相较于双语组无优势,而中级译员(包括高级学员、新手译员)和老手译员之间也无差异。因此,前期研究的不一致性也源自口译经验的不同和没有清晰界定口译经验和口译水平的区别。

2) 实验任务的多样性。前期研究的混合结果也是因为对工作记忆广度的测量使用了很多不同类型的任务。具体来说,前期实验包括了非语言任务,如非词重复[39]、数字任务[46]、字母任务[19]以及语言广度任务[41]等。其中,语言广度任务包括口语任务[37]、听力任务[38]和阅读任务[42],涉及母语任务[37]和二语任务[50];而任务中还可能涉及是否使用发音抑制[49]或是顺序回忆[38]、倒序回忆[47]、自由回忆[36]等变量。因此,工作记忆实验任务的多样性降低了研究结果的可比性。

3) 口译经验和任务类型之间的交互效应。[56]发现口译经验对语言广度任务有中度到高度的调节效应,对数字和字母广度任务中有中度效应,而对非语言广度任务则无效应,“口译经验倾向于提高与语言相关的记忆广度”([56], p. 11)。[35]也认为实验任务与口译过程相似度越高,越容易出现迁移优势。例如,[66]就发现职业同传比双语者具有更快的翻译速度和双语流程性,但在词语阅读和图片命名等非专业领域无优势。

## 6. 未来研究的方向和重点

第一,未来研究需要更加严谨的研究设计,获取大样本数据,严格控制口译经验、二语经验、人口

背景等干扰变量,减少译员被试组内的异质性,同时厘清各种工作记忆任务机制的异同,尽可能多地针对不同口译人群复制成熟的实验任务,提高研究结论的可比性,为译员的工作记忆优势提供更为充分证据。

第二,未来研究需要更多关注工作记忆对口译水平提升的贡献度。已有的荟萃分析说明职业译员的工作记忆优于对照组,但是目前关于工作记忆优势是否能够影响口译表现的研究主要集中在学生译员(尤其是本科初学阶段),而工作记忆如何影响能否预测职业译员的口译经验和口译水平的研究不足。因此,未来研究可以更多关注不同阶段的口译经验与工作记忆的双向关系。

第三,未来研究需要更多不同语对和不同方向的口译经验,来考察不同的口译语言和口译方向是否会对工作记忆产生不同的影响。目前研究涉及的欧洲语对较多,针对中文和英文两种工作语言的译员工作记忆优势研究较少,且目前主要针对的是本科阶段的英语和非英语专业的学生译员。学生译员在这个阶段的口译经验相对不足,且口译练习的主要方向是 B-A (英译汉)。未来研究可关注更高阶的、具有汉英口译经验的学生译员和职业译员的工作记忆发展。

## 7. 结语

目前学界对口译工作记忆优势的研究重点关注两大问题:一是口译经验能否产生工作记忆优势;二是工作记忆优势是否能够影响口译表现。已有量化证据因为受到研究设计、任务难度、口译经验或水平以及二语水平等因素的干扰,还未能提供译员认知优势的充分证据。鉴于口译经验中大量的语言、加工和语境控制对工作记忆的需求,未来针对口译员的工作记忆的研究不仅将对心理语言学实验范式产生积极影响,而且有助于厘清口译经验与工作记忆的互动关系。

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