

Hyperpolyglots and cross-linguistic influence: a study of cognitive and metalinguistic strategies

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Abstract

This study investigates the cognitive strategies and metalinguistic awareness employed by hyperpolyglots—defined here as individuals fluent in six or more languages—to navigate cross-linguistic influence (CLI) in the context of language learning. While interest in multilingualism and language transfer has grown, empirical research focusing specifically on hyperpolyglots remains scarce. Addressing this gap, the study examines how these individuals manage CLI across linguistically diverse repertoires, encompassing both closely related and typologically distant languages. Data was collected through semi-structured interviews and a detailed language background questionnaire from twenty hyperpolyglot participants. The analysis revealed that hyperpolyglots draw on sophisticated cognitive strategies, including compartmentalization of languages and selective activation, to regulate both facilitative and interfering transfer effects. Additionally, they exhibited heightened metalinguistic awareness, which enabled them to distinguish between languages and minimise interference. This study concludes that hyperpolyglots' unique linguistic and cognitive abilities provide important insights into the limits of language learning, highlighting the potential benefits of extensive language knowledge and offering a new perspective on the dynamics of multilingualism. These findings contribute to the broader understanding of CLI, cognitive control, and metalinguistic awareness in multilingual individuals.

Keywords Hyperpolyglots, cross-linguistic influence, language transfer, metalinguistic awareness, cognitive strategies, typological influence

1. Introduction

The acquisition of multiple languages is a cognitively demanding process shaped by dynamic interlinguistic interactions, among which cross-linguistic influence (CLI) plays a central role. CLI refers to the ways in which knowledge of one language affects the acquisition or use of another, and it encompasses both facilitative effects (positive transfer) and interference (negative transfer) (Jarvis & Pavlenko, 2008). While the phenomenon has been extensively

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explored in studies on bilingual and early multilingual learners, research has predominantly centered on individuals navigating between two to five languages. This leaves a critical gap in our understanding of how CLI operates in speakers with significantly larger linguistic repertoires.

Hyperpolyglots—defined here as individuals fluent in six or more languages (Hudson, 2012)—represent a distinct and under-researched group in the field of multilingualism. Their exposure to and command of a broad array of languages, often including both typologically similar and distant ones, offer a unique lens through which to investigate the cognitive mechanisms underlying CLI. Given the diversity of their language backgrounds, hyperpolyglots likely encounter both increased opportunities for transfer and a heightened risk of interference. Yet, little is known about how they manage such complexities or whether their strategies diverge qualitatively from those of less multilingual individuals.

This study addresses this gap by examining the cognitive strategies and metalinguistic awareness hyperpolyglots use to regulate CLI. Particular attention is paid how they leverage their linguistic experience to facilitate new learning. By analysing the learning experiences of this highly multilingual population, the study aims to shed light on the cognitive and metalinguistic resources that support successful language management in complex multilingual environments. In doing so, it contributes to a broader understanding of the limits and possibilities of language learning across varying degrees of multilingualism.

1.1. Review of the literature

The study of CLI in language acquisition focuses on understanding how the knowledge of one language affects the learning or usage of another. This area of research explores the impact of a learner's first, second, or additional languages on their ability to acquire and use new linguistic structures, examining both positive and negative influences across various language combinations. As language acquisition research evolved, a growing body of work has focused on the cognitive and contextual factors influencing transfer in multilingual contexts (Ortega, 2019). In particular, studies have highlighted that as multilingual individuals acquire more languages, their cognitive processing adapts to accommodate increasingly complex language systems, leading to both positive and negative transfer effects (Cenoz, 2013; De Angelis & Dewaele, 2011). However, most of the existing research has focused on bilingual or trilingual individuals, with limited attention paid to hyperpolyglots (De Angelis & Dewaele, 2011; Ortega, 2019). Hyperpolyglots, with their extensive linguistic knowledge, likely experience unique challenges in managing CLI when switching between a wide range of languages, especially those from different language families.

The task of managing multiple languages with varying degrees of typological similarity presents an intriguing question: how do hyperpolyglots handle the interference of such diverse linguistic systems? Previous research has suggested that multilinguals with extensive language repertoires exhibit heightened cognitive flexibility and metalinguistic awareness, which help mitigate interference and optimize language acquisition (Jessner, 2018). These cognitive abilities, such as distinguishing between linguistic structures and

suppressing interference from competing languages, are thought to play a critical role in managing transfer. Indeed, studies show that multilinguals with high metalinguistic awareness can better recognize structural differences across languages, which helps them avoid negative transfer (De Angelis, 2007). This suggests that hyperpolyglots, due to their advanced metalinguistic abilities, may develop unique strategies for managing CLI across a wider range of languages. Hyperpolyglots may indeed possess heightened metalinguistic awareness, allowing them to compartmentalize languages more effectively, thereby reducing the cognitive load involved in switching between languages.

The concept of positive and negative transfer in language learning becomes even more nuanced when considering languages of varying typological diversity. Positive transfer, often facilitated by structural similarities between languages, occurs when linguistic features from one language are applied successfully to another, making language learning easier. For example, learners of Romance languages often benefit from the shared lexical and grammatical features among languages such as Spanish, Italian, and French (Ringbom, 2006). However, for hyperpolyglots, whose language repertoires often span typologically distinct languages, the opportunity for positive transfer may be limited, and they may face greater challenges in managing negative transfer due to fewer structural overlaps between the languages they speak. Research has suggested that multilinguals acquire additional cognitive strategies to navigate these challenges, especially when dealing with languages from unrelated language families (Bardel & Falk, 2011). For example, Cook and Basetti (2010) found that learners often apply phonological or syntactic rules from their L1 to an L2, leading to errors when languages differ in structure. In the case of hyperpolyglots, this type of interference might be amplified due to the broader and more varied linguistic base from which they draw.

Jessner (2018) further argues that as multilinguals expand their linguistic repertoire, they develop specific cognitive strategies to manage interference. These strategies may involve the compartmentalization of languages—mentally separating languages based on context or usage, which reduces the likelihood of transfer errors between similar languages. This strategy is supported by studies that have found multilinguals often associate languages with specific social, professional, or academic contexts to avoid interference (Palfreyman & Van der Walt, 2017). In the case of hyperpolyglots, compartmentalization may be even more essential, as they often manage a complex mix of languages from distinct families, each with its own set of rules and structures. Erard (2012) suggests that hyperpolyglots naturally employ this strategy to maintain proficiency without confusion, associating each language with a specific cognitive or social domain.

The role of typological diversity in CLI has also been a recent focus of research, as studies suggest that the more distinct the languages, the less likely it is that interference will occur (Bardel & Falk, 2011; De Angelis, 2007; Dewaele & Li Wei, 2012; Ringbom, 2006). Research on bilinguals has shown that typologically diverse languages—those that differ significantly in structure—create distinct cognitive spaces in the brain, which helps prevent negative transfer (Ringbom, 2006). In the case of multilingual individuals, acquiring languages that are typologically distinct may serve as a natural

buffer against negative transfer because the structural differences reduce the likelihood of applying rules from one language to another. For hyperpolyglots, who often manage languages from multiple linguistic families, typological diversity may therefore act as a deliberate strategy to compartmentalize languages and avoid transfer issues. Dewaele and Li Wei (2012; 2013) suggest that learning a diverse range of languages helps multilinguals manage CLI because each language occupies a distinct cognitive space. Through an examination of the strategies employed by hyperpolyglots, this study intends to contribute to the understanding of CLI in multilingual contexts, offering new insights into how these individuals manage complex linguistic systems and reduce the potential for interference.

1.2. *The present study*

As noted above, although multilingualism research has advanced considerably, hyperpolyglots remain an under-researched group within CLI studies, particularly in terms of how they handle transfer across a wide range of languages. This study addresses this gap by investigating the transfer management strategies of hyperpolyglots, with an emphasis on metalinguistic awareness, compartmentalization, and the strategic use of typologically diverse languages. By focusing on these factors, this study seeks to provide insights into the cognitive and contextual mechanisms that enable hyperpolyglots to manage CLI effectively, with implications for broader theories of language acquisition.

This study is guided by three primary research questions:

- 1- What cognitive and metalinguistic strategies do hyperpolyglots use to manage positive and negative cross-linguistic influence across six or more languages?
- 2- How do hyperpolyglots manage CLI differently when learning languages from typologically similar versus typologically distinct language families?
- 3- To what extent does metalinguistic awareness play a role in helping hyperpolyglots minimize interference and leverage transfer across their language repertoire?

These questions aim to uncover the specific techniques that enable hyperpolyglots to balance their diverse linguistic knowledge effectively and to explore how typological diversity and metalinguistic awareness contribute to managing CLI in highly multilingual individuals.

2. Methodology

To investigate the cognitive and metalinguistic strategies used by hyperpolyglots in managing cross-linguistic influence (CLI), this study adopts a qualitative research design grounded in semi-structured interviews and supported by a language background questionnaire. This mixed-methods approach allows for a nuanced exploration of participants' language learning experiences, self-reported proficiency levels, and strategic responses to language transfer across typologically diverse repertoires. Given the limited

empirical work focused specifically on hyperpolyglots, a qualitative methodology was chosen to capture the depth and variability of individual experiences while enabling the identification of common themes in CLI management.

2.1. Participants

Twenty hyperpolyglots, each proficient in a minimum of six languages, participated in the study to examine the diverse strategies they employ to manage CLI in complex multilingual settings. Participants were recruited from hyperpolyglot communities and language forums where individuals with significant multilingual proficiency often connect and discuss language learning experiences. To be eligible, each participant had to demonstrate proficiency across at least six languages, including representation from at least one Romance language (e.g., Spanish, French), one Germanic language (e.g., German, Dutch), and one Slavic language (e.g., Russian, Polish), as well as at least one non-Indo-European language (e.g., Mandarin, Arabic). This typological diversity was intentionally included to investigate the potential variation in CLI when learning languages from distinct linguistic families.

Participants' ages ranged from 25 to 50, offering a range of life stages and cognitive backgrounds that may influence language processing and CLI management strategies. Each participant self-reported their proficiency in each language according to the Common European Framework of Reference for Languages (CEFR), with a minimum proficiency level of B1 in all six languages. Although self-assessment is inherently subjective, using the CEFR provided a consistent measure to compare participants' language competencies. Furthermore, self-reports have been shown to be reasonably reliable, especially when used in conjunction with other methods such as interviews or triangulation (Marian, Blumenfeld, & Kaushanskaya, 2007). In this study, interviews further allowed for verification of self-reported proficiencies, as participants were encouraged to discuss specific linguistic challenges and transfer experiences in each language. This validation step ensured the inclusion of participants with both the depth and breadth of language knowledge required for a meaningful analysis of CLI among hyperpolyglots.

2.2. Data collection

Data was collected through a combination of a language background questionnaire (Appendix A) and a semi-structured interview (Appendix B), designed to capture both qualitative insights and systematic data on each participant's language background and CLI experiences.

The primary data collection tool was semi-structured interviews conducted online, each lasting between 60 and 90 minutes. The interviews were designed to allow participants to share their experiences with CLI and to describe specific strategies they use to manage both positive and negative transfer. Interview questions were informed by prior research on multilingual CLI and adapted based on pilot interviews with two additional hyperpolyglots who were not part of the main participant group. The flexible nature of semi-structured interviews allowed participants to provide detailed examples and explanations, while also enabling the interviewer to explore any unexpected

themes that emerged. All interviews were recorded and transcribed with participant consent, providing a rich qualitative dataset for thematic analysis.

In addition to interviews, each participant completed an online language background questionnaire to provide a structured overview of their language history. This questionnaire covered areas such as acquisition order and age, learning contexts (e.g., formal education, immersion, self-study), current usage frequency for each language, and self-reported experiences with positive and negative transfer. The questionnaire also asked participants to report any conscious strategies they employ to manage CLI, as well as their attitudes toward learning typologically diverse languages. This structured data complemented the qualitative insights from the interviews, allowing for a cross-comparison of language histories and CLI management strategies across participants.

2.3. *Data analysis*

Data was analysed using thematic analysis, a qualitative approach well-suited for identifying recurring patterns in complex data. Thematic analysis allowed for an in-depth exploration of the cognitive and metalinguistic strategies used by hyperpolyglots, as well as the role of language typology in shaping CLI experiences.

The analysis process began with open coding, where key elements in each interview transcript were assigned descriptive codes, capturing specific strategies and reflections related to CLI. Codes were then grouped into broader themes, such as "Transfer Management Strategies," which included cognitive and contextual approaches like language compartmentalization and selective language activation, and "Applications of Metalinguistic Awareness," which covered participants' conscious use of linguistic knowledge to avoid interference. The thematic structure was further refined by cross-referencing these themes with the questionnaire responses, providing validation and additional context for each theme. For example, if a participant described in the interview a strategy for differentiating similar languages, their language history and reported instances of positive transfer from the questionnaire were reviewed to substantiate this claim.

To enhance the accuracy of the findings, inter-coder reliability was established by involving an additional researcher to independently review a subset of the coded data. This process allowed for feedback on theme consistency and the reduction of potential researcher bias, ensuring that the themes accurately reflected participants' experiences.

Ethical standards were upheld throughout the research process, with all participants providing informed consent prior to participation. Privacy and confidentiality were protected through the use of pseudonyms and anonymized data in all reporting. Participants were informed of their right to withdraw at any time, and each was offered a summary of the research findings upon completion, as a courtesy and to support transparency in research (Appendix C).

This methodology, which integrates qualitative interviews with structured questionnaire data, allows for an in-depth exploration of the cognitive and metalinguistic strategies that hyperpolyglots use to navigate CLI across a broad range of languages. By combining rich qualitative insights with

systematic language background data, the study aims to answer the research questions with a comprehensive understanding of the specific methods hyperpolyglots use to handle transfer, the impact of typological diversity on CLI, and the extent to which metalinguistic awareness supports effective transfer management. repertoires.

3. Findings

The results of this study reveal insights into the strategies hyperpolyglots use to manage cross-linguistic influence (CLI), the role of metalinguistic awareness in this process, and the impact of typological diversity on language transfer. Analysis of both interview data and questionnaire responses produced three main themes: (1) Transfer management strategies, (2) Metalinguistic awareness, and (3) Typological diversity and CLI Patterns. The results are presented below, supported by participant quotes and illustrative graphs.

3.1. Transfer management strategies

The most prominent theme among participants was the use of explicit cognitive strategies to manage both positive and negative transfer. All ten participants reported employing various mental techniques to keep their languages separate, particularly when engaging with languages that are typologically similar.

Participants described strategies such as *contextual language compartmentalization*, where they mentally associate certain languages with specific situations or environments. For example, Participant A, who speaks both Spanish and Italian fluently, stated: “When I’m speaking Spanish, I think about the times I used Spanish at work or with Spanish-speaking friends, whereas for Italian, I imagine the time I spent in Italy.” This mental separation helped participants reduce instances of accidental language mixing.

Another prevalent strategy was *selective language activation*, in which participants consciously activate or suppress certain languages based on their linguistic needs. Participant C, fluent in German, Dutch, and English, explained: “When switching from Dutch to German, I have to consciously remind myself to shift my mindset. I might mentally rehearse a few German words before starting a conversation to make sure I’m fully ‘in German mode.’” This technique was especially common among participants managing multiple languages from the same family.

Figure 1 below shows the percentage of participants who reported using each type of transfer management strategy, based on questionnaire responses.

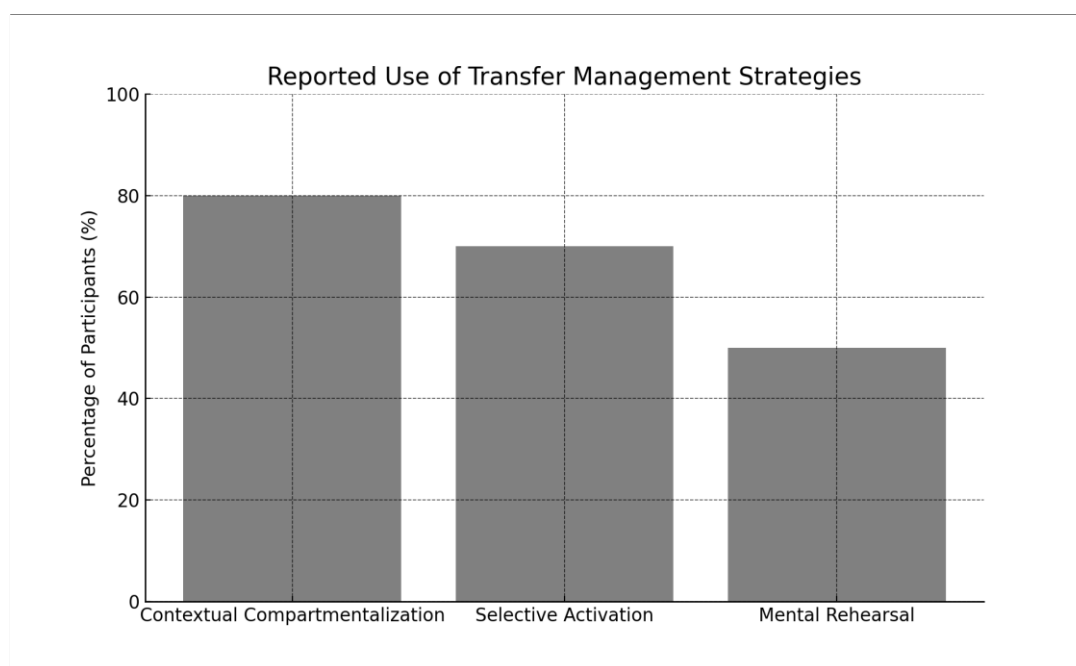


Figure 1. Frequency of participants reporting the use of various transfer management strategies

3.2. Metalinguistic awareness

Metalinguistic awareness emerged as a critical factor in successful CLI management among hyperpolyglots. All participants displayed high levels of conscious reflection on language structure, with particular emphasis on grammatical and lexical differences. This awareness allowed them to navigate positive transfer effectively while minimizing interference.

Participants demonstrated *grammatical contrast awareness* by consciously identifying structural differences between languages and using this understanding to avoid errors. For instance, Participant E, who is proficient in both French and Russian, noted: “French and Russian have different word orders, so I constantly remind myself of this to avoid misplacing words in Russian. I think of Russian as a ‘blockier’ language structure in my mind.” This technique underscores the role of grammatical awareness in managing CLI.

In addition, *phonological awareness* was frequently reported, particularly when learning non-Indo-European languages. Participant G, who speaks Mandarin and Arabic in addition to European languages, described: “The tones in Mandarin were difficult to separate from the intonation patterns of Romance languages. I practiced by isolating Mandarin words and focusing only on tone.” This conscious focus on phonological features illustrates how hyperpolyglots leverage metalinguistic awareness to compartmentalize languages and minimize interference from phonologically distinct languages.

Figure 2 shows the frequency of reported metalinguistic awareness practices across linguistic domains (grammar, phonology, and vocabulary) as described by participants.

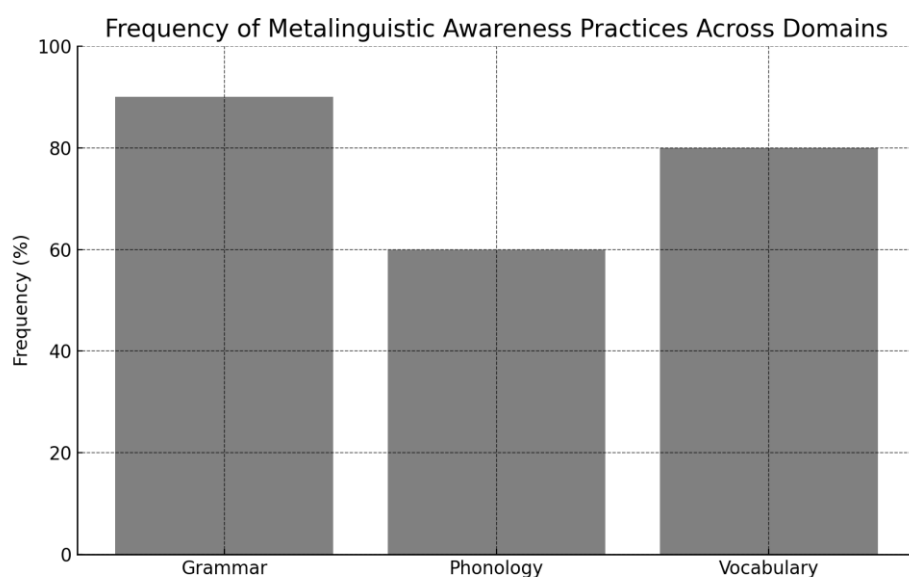


Figure 2. Frequency of metalinguistic awareness practices across grammatical, phonological and lexical domains

3.3. Typological diversity and CLI patterns

Participants indicated that typological diversity among their languages significantly influenced their experiences with CLI. Those with greater typological diversity in their language repertoire reported distinct CLI challenges and adapted strategies. Participants learning languages from distinct families, such as Participant H (who speaks Japanese, Arabic, and Portuguese), described needing to mentally "shift" between fundamentally different linguistic systems. Participant H explained: "Switching between Japanese and Portuguese requires a complete reset in my thinking process, more so than between European languages. I associate Japanese with imagery-based thinking, while for Portuguese, I focus more on sentence flow."

In contrast, participants with multiple languages from the same family (e.g., several Romance or Germanic languages) reported experiencing more frequent CLI but were also more adept at leveraging positive transfer for vocabulary and syntax. Participant D, fluent in Spanish, Italian, and Portuguese, stated: "I find it easier to pick up new Romance languages because the structure and vocabulary overlap. The challenge is making sure I don't mix them up." These findings suggest that typologically similar languages provide both benefits and obstacles for hyperpolyglots, with positive transfer aiding in language acquisition but requiring greater effort to maintain language separation.

Figure 3 illustrates the relationship between typological diversity and self-reported CLI experiences among participants. This figure highlights that participants with typologically diverse language repertoires report fewer instances of transfer errors compared to those with more typologically similar languages.

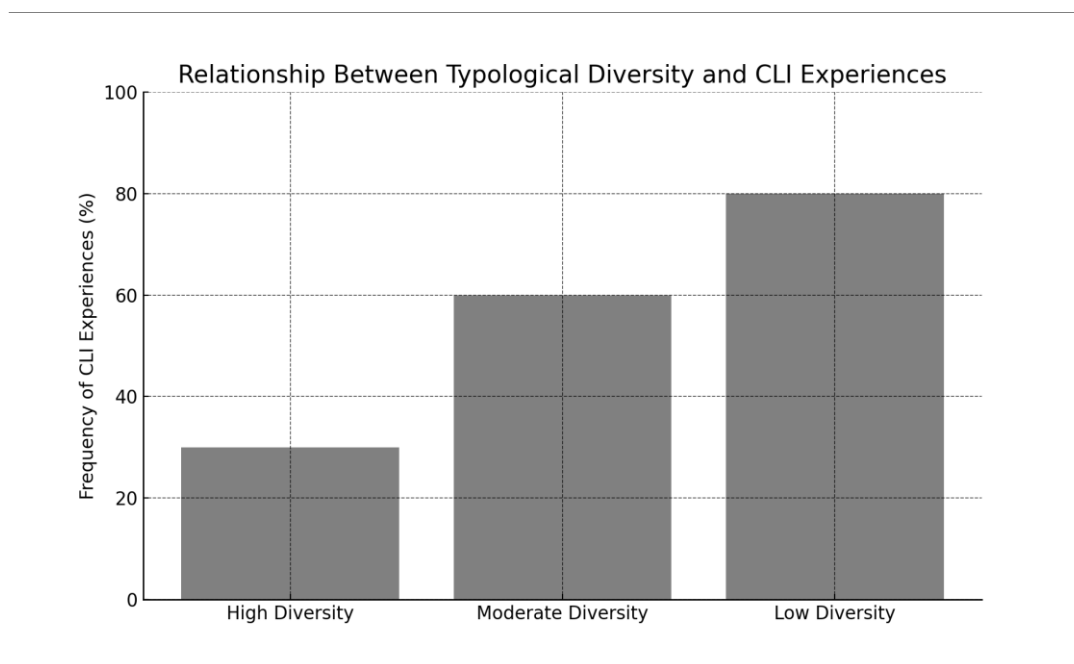


Figure 3. Frequency of CLI experiences based on typological diversity

In summary, the results indicate that hyperpolyglots employ a variety of sophisticated strategies to manage CLI, including contextual language compartmentalization and selective activation of languages. Metalinguistic awareness, especially in grammatical and phonological domains, plays a central role in minimizing interference across languages. Finally, typological diversity influences both the challenges and benefits of CLI, with hyperpolyglots reporting different strategies depending on the similarity or dissimilarity of their language families.

4. Discussion

This study seeks to explore how hyperpolyglots manage cross-linguistic influence (CLI) across extensive, typologically diverse language repertoires. Findings reveal a nuanced approach to CLI that incorporates various cognitive strategies and metalinguistic awareness, and these results deepen our understanding of multilingual cognition in ways that build upon and extend previous research. By examining hyperpolyglots' methods of language separation and their awareness of linguistic differences, this study uncovers how these individuals manage a level of linguistic complexity that goes beyond what has been traditionally documented in bilingual or multilingual research.

In terms of cognitive adaptations, our study confirms that hyperpolyglots actively employ strategies to compartmentalize their languages and selectively activate specific linguistic knowledge, which aligns with theories on multilingual cognitive control (Bialystok, 2011). These cognitive adaptations reveal that hyperpolyglots do not simply apply conventional language separation methods—such as assigning different languages to specific domains of use, relying on external cues like interlocutor identity or location—but rather develop sophisticated mental techniques to maintain clarity across multiple languages. The reported strategies include contextual language compartmentalization and selective activation, whereby participants actively engage different aspects of language based on environmental context. Several

participants mentally associated specific languages with particular situations, a method of compartmentalization shown to help maintain language boundaries. This finding expands on previous work by Jarvis and Pavlenko (2008), who observed selective activation primarily in bilingual CLI. However, the current study illustrates that hyperpolyglots adapt these techniques further, employing mental rehearsals and preparatory strategies that allow them to “shift” among languages more effectively than multilinguals with fewer languages typically report.

These cognitive strategies appear to be closely tied to participants’ metalinguistic awareness, which emerged as a key factor in their CLI management. Participants exhibited high levels of awareness concerning grammatical, phonological, and lexical distinctions across their languages, which they consciously applied to prevent interference and promote positive transfer. This finding supports prior research on the role of metalinguistic awareness in multilingual learning (Jessner, 2006), but it also indicates an expansion of this capacity among hyperpolyglots. Specifically, hyperpolyglots seem to possess a heightened ability to distinguish and focus on linguistic structures, enabling them to minimize errors even with typologically similar languages. For instance, one participant’s ability to keep Romance languages separate through careful attention to structural differences illustrates how metalinguistic awareness operates at an advanced level in hyperpolyglots. This suggests that hyperpolyglots’ metalinguistic awareness may be more specialized, providing them with the ability to compartmentalize aspects of language structure that might otherwise interfere with language clarity.

It is also important to point out that the typological diversity in participants’ language repertoires plays a role in their CLI experiences. Participants with highly diverse repertoires, spanning multiple language families, reported fewer interference instances than those whose repertoires included mostly typologically similar languages. This observation aligns with Ringbom’s (2006) work on multilingual CLI, which emphasizes the role of language typology in shaping transfer patterns. Participants noted that they experienced fewer instances of CLI interference between languages from distinct families, such as Mandarin and Portuguese, compared to those from the same family, like Spanish and Italian. These findings support the notion that typological diversity facilitates cognitive compartmentalization among hyperpolyglots by enabling them to mentally “file” each language into a unique cognitive category based on structural distinctions.

Nevertheless, typologically similar languages still provide distinct advantages, particularly in facilitating positive transfer, which many participants leveraged to their benefit. Hyperpolyglots who spoke multiple Romance or Germanic languages frequently cited the ease with which they transferred vocabulary, syntax, and morphology across these languages. However, they also reported a greater need for compartmentalization strategies to prevent language mixing, indicating that similarity, while beneficial, also presents challenges. This dual effect highlights a tension between positive transfer and interference, which suggests that typological similarity influences CLI in ways that may require more frequent cognitive regulation for hyperpolyglots than for those with more varied linguistic backgrounds. These observations extend Ringbom’s (2006) findings by showing that positive

transfer and interference are closely intertwined for hyperpolyglots, requiring them to balance the benefits of language similarity against the risks of cross-linguistic mixing.

Overall, these findings suggest that hyperpolyglots demonstrate advanced cognitive adaptations and a refined metalinguistic awareness that facilitate their unique capacity for managing CLI. This study thereby contributes to the broader literature on CLI by showing that hyperpolyglots represent a special case in multilingual cognition. Where Jessner's (2006) Dynamic Model of Multilingualism emphasizes metalinguistic awareness as a general asset in multilingualism, the current study suggests that hyperpolyglots apply this awareness at a higher level of specificity across a wider array of languages, particularly in balancing grammatical and phonological distinctions.

Likewise, the results highlight areas where current cognitive control models may need to be expanded. Bialystok's (2011) model of cognitive control, primarily focused on bilingual and multilingual contexts, could be adapted to include the advanced strategies hyperpolyglots employ, such as language activation and mental rehearsal methods. This study's results suggest that the cognitive processing of hyperpolyglots may represent the upper bounds of multilingualism, potentially involving unique mechanisms that enable them to control an exceptionally complex linguistic repertoire.

Despite these valuable insights, it is important to note the study's limitations. The small sample size and reliance on self-reported data may restrict the generalizability of these findings. Future research would benefit from larger, more varied samples to verify these results and explore additional factors influencing CLI management among hyperpolyglots. Furthermore, incorporating experimental measures such as reaction times or neurological responses to language switching could offer a more comprehensive view of the cognitive processes involved in managing extensive language repertoires. Expanding on these methods could help validate the self-reported strategies highlighted here and deepen our understanding of the neurological basis for multilingual cognitive control among hyperpolyglots.

5. Conclusions

This study explores the cognitive and metalinguistic strategies hyperpolyglots use to manage cross-linguistic influence (CLI) across a diverse set of languages. It highlights the unique adaptations of hyperpolyglots, who handle six or more languages, by employing strategies such as contextual compartmentalization, selective activation, and increased metalinguistic awareness. These strategies help hyperpolyglots navigate challenges like positive transfer and interference, particularly when dealing with languages that are typologically similar.

The study's insights not only build upon the Dynamic Model of Multilingualism (Jessner, 2006) and theories of cognitive control (Bialystok, 2011) but also suggest an expansion of these models to account for the specific demands of hyperpolyglots. The cognitive control mechanisms and refined metalinguistic awareness observed here reveal that hyperpolyglots represent a unique and underexplored group in multilingualism research, offering a window into the upper limits of language management and cognitive

adaptability. Additionally, the impact of typological diversity on CLI experiences among hyperpolyglots highlights the potential cognitive benefits of linguistic variety, suggesting that multilingual learners might leverage such diversity for enhanced language separation and positive transfer.

While this study contributes significantly to our understanding of hyperpolyglot CLI strategies, its limitations call for future research that includes larger sample sizes, diverse linguistic backgrounds, and experimental approaches that capture real-time cognitive responses. Further research could investigate neurological correlates of CLI in hyperpolyglots, adding depth to our understanding of multilingual cognitive processing. By exploring these areas, future studies could continue to unravel the cognitive intricacies of extreme multilingualism, offering valuable insights into advanced language learning strategies that could benefit learners and educators alike. In conclusion, this study not only underscores the distinctive cognitive and linguistic capacities of hyperpolyglots but also emphasizes the potential of this research to inform broader theories of language learning, multilingualism, and cognitive flexibility in the context of increasingly globalized, multilingual societies.

References

- Bialystok, E. (2011). Reshaping the mind: The benefits of bilingualism. *Canadian Journal of Experimental Psychology*, 65(4), 229–235. <https://doi.org/10.1037/a0025406>
- Bardel, C., & Falk, Y. (2011). Object pronouns in German L3 syntax: Evidence for the L2 status factor. *Second Language Research*, 27, 59–82. <https://doi.org/10.1177/0267658310386647>
- Cenoz, J. (2013). The influence of bilingualism on third language acquisition: Focus on multilingualism. *Language Teaching*, 46(1), 71–86. <https://doi.org/10.1017/S0261444811000218>
- Cook, V., & Bassetti, B. (2010). *Language and bilingual cognition*. Psychology Press. <https://doi.org/10.4324/9780203836859>
- De Angelis, G. (2007). *Third or additional language acquisition*. Clevedon, UK: Multilingual Matters.
- De Angelis, G., & Dewaele, J.-M. (2011). *New trends in crosslinguistic influence and multilingualism research*. Bristol: Multilingual Matters.
- Dewaele, J.-M. (2010). Multilingualism and affordances: Variation in self-perceived communicative competence and communicative anxiety in French L1, L2, L3 and L4. *International Review of Applied Linguistics in Language Teaching*, 48, 105–129. <https://doi.org/10.1515/iral.2010.006>
- Dewaele, J.-M., & Wei, L. (2012). Multilingualism, empathy and multicompetence. *International Journal of Multilingualism*, 9(4), 352–366. <https://doi.org/10.1080/14790718.2012.714380>
- Dewaele, J.-M., & Wei, L. (2013). Is multilingualism linked to a higher tolerance of ambiguity? *Bilingualism: Language and Cognition*, 16, 231–240. <https://doi.org/10.1017/S1366728912000570>

- Erard, M. (2012). *Babel no more: The search for the world's most extraordinary language learners*. Penguin Press.
- Hudson, R. (2012). *The biographical encyclopedia of remarkable linguists*. Multilingual Matters.
- Jarvis, S., & Pavlenko, A. (2008). *Cross-linguistic influence in language and cognition*. New York: Routledge.
- Jessner, U. (2006). *Linguistic awareness in multilinguals: English as a third language*. Edinburgh University Press.
<https://doi.org/10.1515/9780748626540>
- Jessner, U. (2018). Metacognition in multilingual learning: A DMM perspective. In Å. Haukås, C. Bjørke, & M. Dypedahl (Eds.), *Metacognition in language learning and teaching* (pp. 31–47). Routledge.
- Marian, V., Blumenfeld, H. K., & Kaushanskaya, M. (2007). The Language Experience and Proficiency Questionnaire (LEAP-Q): Assessing language profiles in bilinguals and multilinguals. *Journal of Speech, Language, and Hearing Research*, 50(4), 940–967.
[https://doi.org/10.1044/1092-4388\(2007/067\)](https://doi.org/10.1044/1092-4388(2007/067))
- Ortega, L. (2019). *Understanding second language acquisition*. Routledge.
- Palfreyman, D. M., & van der Walt, C. (2017). *Academic biliteracies: Multilingual repertoires in higher education*. Multilingual Matters.
- Ringbom, H. (2006). *Cross-linguistic similarity in foreign language learning*. Bristol, Blue Ridge Summit: Multilingual Matters.

Appendices

Appendix A: Language Background Questionnaire

Participant Information

Please provide the following details about your language learning history:

1. Name:
2. Age:
3. Nationality:
4. First Language(s):
5. Other languages you speak (Please list all languages in order of proficiency):

Language	Proficiency Level (CEFR)	Year of Learning	Primary Method(s) of Learning (e.g., immersion, formal education, self-study)
Example: English	C2	Birth	Immersion, formal education

Language Learning History:

1. What age did you begin learning your first foreign language?
2. How many languages do you speak fluently?
3. Please describe your experience with learning multiple languages at the same time.
4. Which languages do you feel most comfortable switching between?

Language Transfer Experience:

1. Have you ever noticed influences from one of your languages when learning another language?
 - Yes
 - NoIf yes, please provide an example of positive and negative transfer you have experienced.
2. When learning new languages, do you consciously separate them to avoid mixing them up?
 - Yes
 - NoPlease elaborate on how you manage this.
3. Do you use any specific techniques or strategies to handle cross-linguistic interference (CLI)? If so, please describe them.

Appendix B: Semi-Structured Interview Guide

Introduction:

- Thank you for participating in this study. The purpose of this interview is to understand your experiences and strategies in managing cross-linguistic influence (CLI) across the languages you speak. Please feel free to elaborate on your answers as much as possible.

Questions:

1. Language Learning Background
 - Can you tell me a bit about how you started learning your languages? What was the progression of your language learning journey?
 - What methods did you use to learn your languages (e.g., formal education, immersion, self-study, etc.)?
2. Cross-Linguistic Influence
 - How do you think knowing multiple languages affects your ability to learn new languages?
 - Can you recall specific instances where knowledge from one language helped you learn another (positive transfer)?
 - Have you encountered any instances where knowing one language caused confusion when learning or using another language (negative transfer)? Please provide examples.
3. Managing Language Interference
 - When you are switching between languages, do you have any strategies to avoid interference or mixing languages?
 - For example, do you mentally "switch off" certain languages, or do you compartmentalize them in specific contexts (work, home, travel, etc.)?
 - How do you differentiate between languages that are similar and those that are more distant from each other in terms of grammar or vocabulary?
4. Metalinguistic Awareness
 - Do you feel more aware of the structure of languages as you learn more? How does this awareness help you avoid confusion or interference?
 - When faced with a language learning challenge, do you rely on recognizing patterns between languages? Can you give an example of how this has helped you?
5. Typological Influence
 - Does the typological relationship between the languages you know (e.g., Romance vs. Germanic vs. non-Indo-European) influence how easily you learn new languages? How so?
 - Do you think that speaking languages from different families or linguistic groups makes it easier or harder to avoid mixing them up? Why?
6. Cognitive Strategies
 - Are there any cognitive strategies that you use to switch between languages without interference?
 - Do you have any mental "tricks" or techniques that help you activate the right language at the right time?
7. Final Thoughts
 - In your opinion, what is the biggest advantage of knowing many languages?
 - What advice would you give to someone learning multiple languages to minimize confusion and maximize success?

Appendix C: Consent Form for Participants

Consent to Participate in Research Study

You are invited to participate in a research study conducted to explore how individuals who are fluent in six or more languages manage language transfer and interference.

Purpose of the Study:

The study aims to explore the cognitive strategies and metalinguistic awareness used by hyperpolyglots to handle cross-linguistic influence when learning and using multiple languages.

Procedures:

The study will involve an interview lasting approximately 60 minutes, during which you will be asked to answer questions related to your language learning experiences. You will also be asked to complete a language background questionnaire.

Confidentiality:

Your participation in this study is confidential, and all personal information will be kept private. Data will be anonymized and securely stored. Only the research team will have access to the data.

Voluntary Participation:

Your participation in this study is entirely voluntary. You may choose not to answer any question and may withdraw from the study at any time without penalty.

Risks and Benefits:

There are no known risks associated with participating in this study. The information obtained may contribute to a greater understanding of multilingual language learning and can provide insights into cognitive processes involved in managing multiple languages.

By signing below, you are indicating that you have read and understood the information provided, and that you agree to participate in this study.

Participant
Date: _____
Researcher
Date: _____

Signature: _____
Signature: _____