Systematic analysis of codeswitching functions among Maghreb Arabic-French-English trilingual speakers

ABSTRACT

This dissertation systematically examines codeswitching (CS) functions among Maghreb Arabic (MA)–French–English trilingual speakers—a previously underexplored language combination. First, this study extends the scope of previous CS research within the North African context, which has largely focused on bilingual interactions rather than trilingual ones. Second, it provides a deeper understanding of CS by employing novel qualitative approaches—namely Cognitive Linguistics and Cultural Linguistics (CL)—instead of relying solely on traditional perspectives—namely structural, psycholinguistic, and sociolinguistic—that are largely confined to sociolinguistic and syntactic dimensions. Third, it offers a clearer overview of linguistic preference and dominance within speakers' discourse and reveals insights into the roles CS plays in shaping that discourse by incorporating quantitative methods, such as word counts and percentage distributions. Moreover, it contributes to a more objective analysis of the functions of CS through the use of metalinguistic interviews and the calculation of intercoder reliability (ICR), thereby mitigating researcher bias.

The study draws on data collected from 29 trilingual participants, all highly proficient, habitual codeswitchers with positive attitudes towards CS. Data were collected through questionnaires, audio recordings of natural interactions, and metalinguistic interviews that prompted participants to reflect on their language use. The questionnaire data helped in selecting participants who met the study's criteria. The audio-recorded data were analyzed using content analysis, the usage-based approach and frame semantics from Cognitive Linguistics, and the analytical tools provided by CL, yielding novel insights into CS functions. Data from the metalinguistic interviews helped manage initial challenges in identifying and categorizing these functions and provided additional support for the study's findings.

The findings revealed distinct functions of CS across four categories. Pragmatic functions involve the use of CS for showing contrast, highlighting important information, listing, signaling conclusion, emotional distancing, message qualification, setting off side-remarks, and using conventional terms, thus enhancing conversational structure and clarity. Semantic functions involve the use of CS for business, technology, and power terminology, conceptual shifting in meaning, terms in the domain of intellectuality, and critical evaluation, enabling subtle meanings and representations that may be difficult to express in MA. Linguistic functions involve the use of CS for coping with dysfluencies and economy of expression, enhancing fluency and efficiency. Sociocultural functions involve the use of CS for marking identity, with participants often switching to align with educational/cultural ideals. In religious contexts, however, participants avoided CS to affirm their Islamic identity. CS also enables the expression of individualistic values and the discussion of negatively viewed concepts, with French and English providing an effective means of communication. Additionally, the study revealed that CS among these trilingual speakers primarily served sociocultural and pragmatic purposes, with less emphasis on semantic and linguistic functions.

This study significantly advances multilingualism research by offering an in-depth analysis of CS functions in a trilingual context. The findings demonstrated how pragmatic, semantic,

linguistic, and sociocultural motivations shape language use, providing insights relevant to CS theory and the practice of multilingual communication.

Keywords: *CS, trilingualism, Maghreb Arabic, pragmatic CS, semantic CS, linguistic CS, sociocultural CS*

CHAPTER 1

INTRODUCTION

Overview

This chapter is divided into six sections. The first section (1.1) outlines the background of research on CS, starting with stressing the global prevalence of multilingualism. It then briefly traces the development of CS research and provides details on the sociolinguistic situation in North Africa (NA). The second section (1.2) discusses the statement of the problem while explaining the reasons behind this study. Details on the aims of the study and the research questions are next presented by the two subsequent sections (1.3, 1.4). The subsequent section (1.5) discusses the significance of the study. Finally, the chapter concludes with an overview of the dissertation outlining the content of the subsequent chapters in the study (1.6).

1.1 Background

Multilingualism, driven by historical, cultural, and political factors, defines NA's linguistic landscape, where Arabic, Amazigh, French, and English interact (Hoffmann, 2001; Brown, 2020). CS reflects this complexity, shaped by colonial influences, Arabization policies, and globalization. French remains prestigious in education, administration, and science, while English gains prominence as a modern lingua franca, highlighting NA's dynamic multilingual environment (Daoud, 2001; Sayahi, 2011).

1.2 Statement of the problem

Although extensive research has explored CS in bilingual and multilingual contexts (e.g., Appel & Muysken, 2005; Auer, 1984, 2000, 2007; Gumperz, 1982; Myers-Scotton, 1995; Poplack, 1980), several gaps remain—particularly in the North African context, where most studies (e.g., Bentahila & Davies, 1983; Bouzemmi, 2005; Sayahi, 2011) have focused on Arabic–French

bilingualism. Research on trilingual CS involving Maghreb Arabic (MA), French, and English is still limited. Although many theoretical models have addressed when, how, and why speakers switch codes (e.g., Gumperz, 1982; Auer, 1984; Myers-Scotton, 1993; Poplack, 1980), these models mainly adopt sociolinguistic or syntactic perspectives. They often overlook cultural and cognitive aspects of language use. Additionally, most CS studies rely on researcher interpretation and do not include procedures to confirm speaker intent. Quantitative tools such as word counts and percentage distributions are also rarely used, despite their value in showing language preference and dominance. This study fills these gaps by focusing on CS among MA–French–English trilinguals, combining qualitative and quantitative methods, and offering an interdisciplinary and more objective framework for analysis.

1.3 Aims of the study

This study aims to address key contextual, theoretical, and methodological gaps in the existing CS literature, with a specific focus on trilingual speakers of MA, French, and English. It seeks to extend the scope of previous research in the North African context, which has mostly examined bilingual interactions, by exploring trilingual CS. The study also aims to deepen understanding of CS through the use of novel qualitative approaches—namely Cognitive Linguistics and Cultural Linguistics (CL)—rather than relying solely on traditional structural, psycholinguistic, and sociolinguistic perspectives, which are often limited to sociolinguistic and syntactic dimensions. Furthermore, it aims to provide a clearer picture of linguistic preference and dominance in speakers' discourse and to uncover the functions of CS by incorporating quantitative methods such as word counts and percentage distributions. Additionally, it aims to ensure analytical objectivity and validates speaker intent through the use of metalinguistic interviews and the calculation of intercoder reliability (ICR), helping to reduce researcher bias.

1.4 Research questions

This research aims to answer the following questions:

1. What are the functions of CS among the MA-French-English trilingual speakers participating in this study, and how can these functions be systematically categorized into broader categories—pragmatic, semantic, linguistic, and sociocultural?

2. What is the percentage distribution of the broader categories—pragmatic, semantic, linguistic, and sociocultural—within the CS practices of the participants in this study?

1.5 Significance of the study

This study holds significant value for multilingualism research by addressing key gaps in the literature through a comprehensive exploration of CS functions among trilingual speakers of MA, French, and English—a linguistic combination that remains underexplored. It extends previous research in the North African context, which has mainly focused on bilingual interactions, by shifting attention to trilingual CS. The study deepens understanding by applying novel qualitative approaches—namely Cognitive Linguistics and CL—rather than relying solely on structural, psycholinguistic, and sociolinguistic perspectives, which are largely confined to sociolinguistic and syntactic dimensions. It shows that CS also operates across cognitive and cultural dimensions, calling for an interdisciplinary framework that integrates structural, psycholinguistic, sociolinguistic, cognitive, and cultural perspectives to reflect the complex nature of trilingual discourse. The study also incorporates quantitative methods, such as word counts and percentage distributions, to offer a clearer overview of linguistic preference and dominance, representing a rare and valuable contribution to CS research. Furthermore, it promotes analytical objectivity through the use of metalinguistic interviews and the calculation of ICR, helping to reduce researcher bias. Overall, this study bridges important gaps in CS research and is expected to inform and inspire future studies on multilingual communication.

CHAPTER 2
LITERATURE REVIEW

Overview

This chapter is divided into nine sections. The first section (2.1) introduces the concept of bilingualism, while the second (2.2) differentiates it from multilingualism, highlighting the distinctions between the two. Section 2.3 examines the theoretical background of CS and related terminology, distinguishing it from other language contact phenomena such as codemixing (CM) and lexical borrowing (LB). This is followed by an exploration of the main theoretical perspectives on CS (2.4). Section 2.5 reviews factors identified in the literature as correlating with or

influencing CS, while Section 2.6 provides insights from CS studies on trilinguals, focusing on its sociolinguistic, educational, developmental, and structural dimensions. Section 2.7 discusses documented functions of CS in existing research. Further, Section 2.8 outlines qualitative research approaches and frameworks relevant to the study of CS. The chapter concludes with Section 2.9, which addresses the issue of ICR in qualitative research, emphasizing its role in ensuring consistency and validity in data analysis.

2.1 Bilingualism

Bilingualism lacks a universal definition, ranging from full proficiency in both languages (Bloomfield, 1933; Haugen, 1953) to viewing it as a continuum of language use (Dewaele, 2015). Practical definitions emphasize regular use across contexts (Appel & Muysken, 2005; Grosjean, 2010), though interdisciplinary debates persist (Yim & Clément, 2021; Valdés-Fallis, 1978).

2.2 Multilingualism versus bilingualism

Multilingualism, distinct from bilingualism, involves using three or more languages and exhibits greater complexity in language processing, cross-linguistic influence, and cognitive skills (Aronin, 2019; Herdina & Jessner, 2002). Studies highlight unique multilingual phenomena, such as the M-factor, enhanced metalinguistic awareness, and different language acquisition strategies (Allgäuer-Hackl & Jessner, 2019; Kemp, 2007), emphasizing the need for separate research frameworks (Aronin & Jessner, 2015).

2.3 Theoretical background of CS and terminology issues

2.3.1 History of CS and views attached to it in every stage

CS research evolved from early views of linguistic interference (Weinreich, 1953; Vogt, 1954) to recognizing it as a systematic and skilled practice (Gumperz, 1982; Poplack, 1980). Studies highlight its role in identity construction (Zentella, 1997), education (Cole, 1998), and cultural expression (Rodriguez-Fornells et al., 2012), emphasizing its significance in bridging linguistic and social boundaries in multilingual contexts.

2.3.2 Terminology issues

CS is broadly defined as the alternation between linguistic varieties within a single discourse or utterance (Woolard, 2004; Myslín & Levy, 2015). Scholars differ on whether "code" equates to "language" (Muysken, 2000) or includes dialects and styles (Myers-Scotton, 1995). Structural perspectives highlight grammatical patterns (Muysken, 2000), while psycholinguistic views focus on cognitive mechanisms underlying bilingual speech (Kootstra, 2015). Despite terminological inconsistencies, CS is widely recognized as "the alternate use of elements from two different languages or dialects within the same conversation or even the same utterance" (Gardner-Chloros, 1991, as cited in Lawson & Sachdev, 2000, p. 1344).

2.3.2.1 CS versus codemixing

CS and CM are often used interchangeably (Gardner-Chloros, 2009; Wei, 2000), though some argue they are distinct, with CS relating to discourse-level alternations and CM reflecting intrasentential linguistic integration (Auer, 1998; Stavans & Swisher, 2006). Despite structural distinctions, their overlap in communicative functions blurs boundaries, leading many to use CS as an umbrella term encompassing all types of alternations (Myslín & Levy, 2015; Anchimbe, 2015).

2.3.2.2 CS versus lexical borrowing

CS involves the spontaneous use of elements from another language within a sentence, while LB refers to the integration of these elements into the lexicon of the recipient language, making them stable components (Weinreich, 1953; Treffers-Daller, 2023). Listedness in the mental lexicon and community acceptance are key criteria distinguishing LB from CS, with entrenchment playing a critical role in solidifying borrowings (Stell & Yakpo, 2015; Muysken, 2000).

2.4 Different perspectives of the notion of CS

CS has been studied through structural, psycholinguistic, and sociolinguistic lenses, each addressing distinct research questions and criteria (Stavans & Muchnik, 2008; Amuzu, 2015).

2.4.1 CS from a structural perspective

Structural approaches to CS view it as a rule-governed phenomenon influenced by grammatical constraints and psycholinguistic processes (Poplack, 1980; Myers-Scotton, 1997). Key models include the Matrix Language Frame (MLF), which identifies a dominant grammatical frame, and alternational models like Poplack's constraints, though counterexamples challenge their universality (Gardner-Chloros, 2009; Winford, 2003).

2.4.2 CS from a psycholinguistic perspective

Psycholinguistic research examines the cognitive mechanisms enabling CS, focusing on language activation, inhibition, and executive control (Kroff et al., 2023; Myslín & Levy, 2015). Models like the Inhibitory Control (IC) model (Green, 1998) and Adaptive Control Hypothesis (ACH) (Green & Abutalebi, 2013) highlight the dynamic processes of managing linguistic systems, while Grosjean's (2012) language mode model emphasizes how context shapes language activation. Despite advances, challenges remain in capturing naturalistic CS and the diversity of bilingual practices (Grosjean, 2010; Gardner-Chloros, 2009).

2.4.3 CS from a sociolinguistic perspective

CS reflects the linguistic outcomes of language contact shaped by social contexts, analyzed at societal and individual levels (Gardner-Chloros, 2009). Gumperz's (1982) we-code/they-code framework and Myers-Scotton's (1995) Markedness Model highlight CS's role in identity, social norms, and power dynamics, though critiques emphasize its context-specific and fluid nature (Wei, 1998; Auer, 2005). Integrating sociolinguistic, structural, and psycholinguistic insights is essential for a comprehensive understanding of CS (Bullock & Toribio, 2009).

2.5 Factors correlating with or influencing CS

CS is influenced by structural, psycholinguistic, and sociolinguistic factors, including gender, education, interlocutor, setting, language dominance, proficiency, and attitudes (Blom & Gumperz, 2000; Gardner-Chloros, 2009; Gertken et al., 2014; Olson, 2023). Context and individual variables, such as social norms and language history, play critical roles in shaping CS patterns, emphasizing its complexity and interdependence across domains (Dewaele & Wei, 2014; Yim & Clément, 2021).

2.6 CS in trilinguals

Research on multilingual CS spans sociolinguistics, education, acquisition, and grammar, highlighting its complexity and diversity (Parafita Couto et al., 2023). Sociolinguistic studies explore societal influences, such as Chan's (2019) work on trilingual CS in Hong Kong, while educational research, like Leonet et al. (2017), demonstrates translanguaging's role in promoting linguistic equity. Acquisition studies, such as Hoffmann and Stavans (2007), reveal developmental trajectories in trilingual CS, and grammar-focused analyses, including Stell and Parafita Couto (2012), examine structural patterns influenced by typological and social factors.

2.7 Functions of CS

CS serves multiple functions, including highlighting information by marking important or unpredictable elements in discourse (Myslín & Levy, 2015), marking identity through sociocultural or group distinctions (Chan, 2019; Brown, 2020), and filling lexical gaps when precise terms are unavailable (Backus, 2015; Stavans, 1992). It can create emotional distance, helping speakers manage emotionally charged topics (Dewaele, 2015), and assert authority or signal formality in specific contexts (Amuzu, 2015). Additionally, CS may occur without clear intent due to entrenchment, where repeated use leads to automatic retrieval of certain terms (Backus, 2015).

2.8 Qualitative research approaches and frameworks

Qualitative methodologies encompass diverse epistemological approaches aimed at understanding phenomena from participants' perspectives, emphasizing shared epistemological and procedural concerns (Vaismoradi et al., 2013). Content analysis identifies themes and patterns in data without preconceived theories, balancing qualitative interpretation with quantitative insights (Hsieh & Shannon, 2005). Cognitive linguistics approaches, such as the usage-based model (Diessel, 2017) and frame semantics (Fillmore, 2006), explore meaning construction through experience and conceptual structures. CL examines the interplay between language and culture, with Sharifian's (2011) model highlighting how cultural conceptualizations shape communication.

2.9 Intercoder reliability

ICR measures agreement among coders on data coding, enhancing systematicity, transparency, and credibility in qualitative research (O'Connor & Joffe, 2020). It ensures consistent application of coding frameworks, demonstrating shared understanding rather than definitive meanings (Hruschka et al., 2004; Potter & Levine-Donnerstein, 1999). By enabling robust and reliable analyses, ICR strengthens confidence in research findings and their broader applicability.

CHAPTER 3
METHODOLOGY

Overview

This chapter is divided into five sections. Section 3.1 discusses the research design, explaining the rationale for the qualitative approach and its integration with quantitative methods. Sections 3.2 and 3.3 present the context of the study and describe the participants and sampling procedures. Section 3.4 outlines the procedures and tools used for data collection. Finally, Section 3.5 details the analysis of both qualitative and quantitative data.

3.1 Research design

A qualitative research design is essential for this study, aligning with its objectives and focus on the social, cultural, and situational factors shaping CS among MA, French, and English speakers. While quantitative analysis complements qualitative findings, the qualitative approach prioritizes participants' perspectives and ensures minimal disruption to the natural context (Dörnyei, 2007; Vaismoradi et al., 2013). Using methods such as audio recordings and metalinguistic interviews, this design provides rich, non-numerical data, offering comprehensive insights into trilingual CS practices and motivations.

3.2 Context of the research

To address the research questions, participants were selected based on factors influencing CS, with a target sample size of 25–30 deemed sufficient for capturing substantial CS occurrences and

enabling reliable comparisons (Nortier, 2008; Dörnyei, 2007). Data collection focused on semi-spontaneous conversations directed by engaging topics, ensuring natural language use while maintaining conversational flow (Kroll et al., 2008; Nortier, 2008). Participants, familiar with each other's linguistic behavior, recorded conversations in comfortable settings, enhancing the validity of the findings by reflecting genuine social interactions (Wardhaugh, 2006; Nortier, 2008).

3.3 Participants and sampling procedures

This study employed snowball sampling, starting with friends and colleagues in the same dormitory and expanding through recommendations and posts in Facebook groups for Maghreb Arabs in Hungary, such as *Tunisian Students Hungary* and *Stipendium Hungaricum Morocco*. In-person meetings were prioritized over online questionnaires to build rapport, encourage full responses, and reduce stress associated with formal settings (Dörnyei, 2007; Lawson & Sachdev, 2000). A total of 29 participants from diverse universities and disciplines were organized into eight groups, ensuring active engagement, manageable transcription, and maximum variation in the data (Palinkas et al., 2015).

3.4 Data collection

3.4.1 Data collection procedures

Data collection involved three tools—questionnaire, audio recordings, and metalinguistic interviews—following a structured process to ensure comprehensive results (Nortier, 2008). Key steps included: obtaining ethics approval from the University of Pannonia, administering a modified questionnaire in participants' preferred languages, analyzing responses to select qualified participants, recording conversations with signed consent, and conducting metalinguistic interviews both online and in person.

3.4.2 Sources of data

3.4.2.1 Questionnaire

This study uses a tailored version of the Bilingual Language Profile (BLP; Birdsong et al., 2012), termed the Multilingual Language Profile (MLP), to measure language proficiency, language switching use, and language switching attitudes among MA-French-English trilinguals. The MLP

adapts the BLP by including three languages and replacing modules on language use and attitudes with sections on language switching, informed by the Bilingual Code-Switching Profile (BCSP; Olson, 2022). The tool comprises 29 items across four modules: language history, proficiency, language switching usage, and language switching attitudes.

3.4.2.2 Audio-recording

Informal conversations among 29 participants across eight groups were audio-recorded, producing 5.12 hours of data. To ensure natural speech, participants were not informed of the study's focus on CS (Dörnyei & Taguchi, 2009; Nortier, 2008). They selected discussion topics from a provided list. A Tunisian research assistant moderated the sessions, while the researcher adopted a participant-observation approach to minimize the observer's paradox (Labov, 1966; Nortier, 2008).

3.4.2.3 Metalinguistic interviews

Metalinguistic interviews were conducted with nine individuals, representing all eight groups. Sessions involved participants listening to excerpts from their conversations and explaining their CS behavior. To ensure accurate recollections, interviews occurred shortly after the recorded conversations (Dörnyei, 2007; Gass & Mackey, 2013). This approach aligns with Ehrhart's (2015) emphasis on linking linguistic productions to participants' own interpretations, minimizing misinterpretation risks and enriching qualitative analysis.

3.5 Data analysis procedures

The analysis of audio-recorded data followed a systematic approach. Conversations were transcribed by a native MA speaker, verified by another, and reviewed by the researcher for accuracy. Borrowed and codeswitched elements were distinguished, and language usage was quantified, highlighting linguistic preferences and dominance. One transcript underwent detailed content analysis, and data from metalinguistic interviews helped categorize CS functions. ICR ensured transparency and consistency (O'Connor & Joffe, 2020). Theoretical frameworks guided the interpretation of CS functions, and the percentage distribution of broader categories—pragmatic, semantic, linguistic, and sociocultural—was calculated and discussed with representative examples. This approach ensured a thorough and reliable analysis.

CHAPTER 4

RESULTS AND DISCUSSION

Overview

The chapter is divided into two sections. The first section (4.1) addresses research question 1 (RQ1), offering a qualitative analysis of CS functions. It categorizes CS into four broader groups—pragmatic, semantic, linguistic, and sociocultural—illustrated with selected excerpts from the data and supported by participant reflections. The second section (4.2) addresses research question 2 (RQ2), providing a quantitative breakdown of the percentage distribution of CS functions across the dataset. This section also includes visual representations, such as word clouds, to highlight patterns in CS usage across key topics.

4.1 Categories of CS functions

The findings of this study revealed distinct functions of CS across four categories—pragmatic, semantic, linguistic, and sociocultural. First, pragmatic functions of CS include: (1) Showing contrast, with participants frequently switching from MA to French and English to highlight distinctions. This usage aligns with Zhang et al. (2006), who identified contrast as a linguistic tool to differentiate ideas, particularly through symmetric and discourse contrasts. Examples include contrasting pairs in French and English such as *positif* and *négatif*, *plus* and *moins*, "advantages" and "disadvantages," which participants often use within the same sentence to emphasize opposing meanings. (2) Highlighting important information. Participants switch to French or English to emphasize key points, frequently repeating content in these languages to draw attention to significant information. This aligns with Gumperz (1982) and Myslín & Levy (2015), who highlight the role of CS in marking crucial details, a pattern that was consistently present among the study's participants. (3) Listing which allows participants to clearly organize items in discourse. The participants' educational backgrounds may influence this use of CS, as switching languages when listing items supports effective sequencing and coherence. This use of CS is particularly relevant in contexts where structured information presentation is valued, enhancing clarity for listeners. (4) Signalling conclusion is evident in how participants switch to English or French to indicate conversational closure. Phrases like "that's it" and *c'est ça* frequently mark the end of a turn, underscoring CS's role in managing conversational structure. Additionally, CS in

this context allows speakers to summarize viewpoints, reflecting Wei's (2005) observation of CS as a tool for signalling conversational transitions. (5) Emotional distancing is a noteworthy function of CS, with participants frequently choosing French or English for words carrying negative connotations, such as "anxiety" or "depression." This tendency supports findings by Altarriba and Morier (2006), suggesting that using a non-native language can reduce emotional intensity when discussing distressing topics. For the participants, CS facilitates a psychological detachment, enabling them to approach sensitive subjects more comfortably. (6) Message qualification emerges in the data as a tool for elaboration and clarification, with participants switching to French or English to provide further detail. Many participants noted feeling restricted when using only MA for explanations. This finding aligns with Gumperz (1982), who also observed CS as a resource for expanding meaning. (7) Setting off side-remarks demonstrates how participants distinguish main discourse from supplementary comments by switching languages. By moving to French or English for side remarks, participants create conversational boundaries that help clarify their message. This use of CS reflects Auer's (2007) description of language choice as a means of organizing discourse. (8) CS for conventional terms highlights how participants use established lexicons in French and English for domains like education and travel. Terms such as "lecture" or "test" often appear in these languages, as they are perceived as more conventional than their MA equivalents. This preference aligns with Clark's (1992) discussion of conventional language use as a strategy to ensure mutual understanding.

Second, semantic functions of CS include: (1) CS for business, technology, and power terminology. Participants in this study frequently switch to French or English for business, technology, and power terms. This choice reflects the cultural association of these languages with sophistication and global perspectives in NA, where French and English are seen as languages of business and modernity. Additionally, these terms, such as "tax" and "budget," evoke specific frames or mental representations associated with globalization, aligning with Geeraerts' (2006) notion of encyclopedic meaning. (2) CS for conceptual shifting in meaning reveals how language choice reflects context-specific mental images. For example, participants use the English word "kitchen" to describe dorm cooking spaces, whereas The French word *cuisine* and the MA *kūğīnā* refer to private kitchens. Similarly, "Friday" in English and *ğumʿah* in MA represent distinct cultural concepts, with the latter associated with sacredness and religious observance. This CS pattern supports Stavans' (1992) concept of culturally-bound language use. (3) CS for terms in the

domain of intellectuality indicates participants' preference for French or English in expressing abstract or cognitive concepts, like "concept," "idea," and "notion." This finding suggests that participants associate these languages with intellectualism, influenced by their formal education. This unintentional CS aligns with Sharifian's (2011, 2017) view of language, culture, and cognition as interconnected. (4) CS for critical evaluation reveals participants' reliance on French and English for expressing evaluations, such as judgments and opinions. Participants' preference for these languages may reflect their perception of French and English as more powerful for critical thinking. This CS pattern serves both semantic and pragmatic functions by highlighting evaluations while reinforcing the role of French and English as languages of judgment within the group.

Third, linguistic functions of CS include: (1) Coping with dysfluencies is a linguistic function where CS compensates for word retrieval challenges. Participants often use phonetic prolongation of MA elements before switching to French or English to maintain speech fluency. This pattern aligns with studies by Auer (2007) and Manivannan & Maruthy (2024), which highlight CS as a tool for managing dysfluencies in bilingual speech. (2) CS for economy of expression reflects participants' preference for brevity, switching to French or English for terms that have lengthier MA equivalents. Words like "infrastructure" or "architecture" in English or French, for instance, allow for concise expression, underscoring CS's role in efficient communication.

Fourth, sociocultural functions of CS include: (1) CS for marking identity highlights how participants use CS to convey in-group membership and cultural alignment. By adopting the language of previous speakers and incorporating French discourse markers, participants signal their multilingual identity, which they associate with sophistication and education. This sociocultural use of CS reflects Gumperz's (1982) view of CS as a marker of social identity. In religious contexts, however, participants avoid CS to affirm their Islamic identity. Participants maintain the use of MA for religious expressions, such as *ʾallāh* and *subḥān-al lāh*. This consistent choice reflects the cultural and religious significance of Arabic within Islam, where participants use MA to affirm their Muslim identity. (2) CS for expressing individualistic values shows participants' use of French and English to express concepts related to individualism, such as desires, enjoyment, and self-expression. Conversely, terms related to collectivist values, such as those referring to family, friendship, and social gatherings, are predominantly expressed in MA

and rarely switched, suggesting a clear distinction between languages for individualistic and collectivist themes. French and English align with individualism, while MA remains connected to collectivist cultural values. (3) CS for expressing concepts with negative attitudes captures participants' tendency to use French or English for terms with negative connotations, such as "feminism" or "feminist," while positive concepts such as "equality" usually appear in MA. This choice reflects cultural attitudes, as participants distance themselves from concepts perceived as misaligned with their values.

4.2 Percentage distribution of CS categories

Regarding RQ2 which addresses the percentage distribution of the broader categories within the CS practices of the participants in this study, the percentage distribution for each category was determined by calculating the total number of functions within each category and expressing these as percentages of the overall dataset. The findings show that sociocultural and pragmatic functions are the most prevalent, with sociocultural functions representing 38.29% of CS usage and pragmatic functions following at 29.96%. This distribution suggests that participants primarily use CS for sociocultural purposes, including marking identity, expressing individualistic values, and conveying concepts with negative attitudes, as well as for pragmatic purposes, including showing contrast, highlighting information, listing, signalling conclusions, emotionally distancing, qualifying messages, setting off side-remarks, and referring to conventional terms.

Semantic functions, constituting 24.51% of CS usage, reflect the participants' use of CS for business, technology, and power terminology, conceptual shifts in meaning, terms in the domain of intellectuality, and critical evaluation. Linguistic functions, on the other hand, account for just 7.24% of CS usage, indicating that participants' CS behavior is less influenced by the need to cope with dysfluencies or to achieve economy of expression, and more by sociocultural, pragmatic, or semantic motivations.

CHAPTER 5
CONCLUSION

Overview

The chapter is divided into four sections. The first section (5.1) provides a summary of the main findings, offering a concise reflection on the categorized CS functions. The second section (5.2) explores the study's implications, detailing its theoretical, methodological, and practical contributions. The third section (5.3) acknowledges the study's limitations, discussing the contextual and demographic constraints, which may limit the generalizability of the findings. Finally, the chapter concludes with suggestions for future research (5.4), outlining potential areas to deepen and broaden the understanding of CS in trilingual contexts.

5.1 Summary

This dissertation systematically examines the functions of CS among MA–French–English trilingual speakers, a previously underexplored language combination with significant implications for understanding language contact and communication in the Maghreb. It addresses key gaps by extending the focus beyond bilingualism, applying novel qualitative approaches—namely Cognitive Linguistics and CL—alongside quantitative methods such as word counts and percentage distributions, and ensuring analytical objectivity through metalinguistic interviews and the calculation of ICR. Guided by two research questions, the study identifies four main CS function categories—pragmatic, semantic, linguistic, and sociocultural—based on a diverse sample of 29 participants and data collected through questionnaires, recordings, and interviews. Quantitative analysis shows sociocultural functions are most common (38.29%), followed by pragmatic (29.96%), semantic (24.51%), and linguistic (7.24%) functions, highlighting that participants' CS practices are shaped more by sociocultural, pragmatic, and semantic motivations than by linguistic necessity.

5.2 Implications of the study

This study offers significant theoretical, methodological, and practical implications for advancing the understanding of CS among trilingual speakers. It highlights the need for a multidimensional approach, as the findings do not align exclusively with traditional structural, psycholinguistic, or

sociolinguistic perspectives. Instead, tools from Cognitive Linguistics—such as the usage-based approach and frame semantics—and CL were essential in unpacking the functions of CS, which span pragmatic, semantic, linguistic, and sociocultural dimensions. This supports an interdisciplinary framework that captures the complexity of CS in trilingual discourse. Methodologically, the use of metalinguistic interviews provided deeper insight into participants' CS behavior and helped reduce interpretive subjectivity, offering a replicable model for future research. Practically, the findings have implications for multilingual professional domains such as business and diplomacy, where CS serves deliberate functions that enhance communication, clarity, and cultural sensitivity. By demonstrating how trilingual speakers manage discourse and construct identity through CS, this dissertation contributes a comprehensive model for future research in multilingual contexts.

5.3 Limitations of the study

This study presents a valuable framework for analyzing CS in multilingual contexts; however, its findings have limitations in terms of generalizability to other trilingual populations. The research is regionally specific to NA, and differences in cultural, social, historical, and linguistic contexts—as well as language policies and attitudes toward CS—may lead to variations in CS functions and frequency in other settings such as Europe, the Middle East, or Sub-Saharan Africa. Additionally, the Hungarian sociolinguistic context in which participants were situated may have shaped their language use, particularly through increased reliance on English, which differs from the French-dominant environment of the Maghreb. Potential participant bias also poses a limitation, as it may have influenced CS behavior despite mitigation strategies such as the use of familiar topics, comparative analysis, and the involvement of a familiar assistant in data collection. Therefore, while the study provides important insights, its broader applicability is constrained by contextual and demographic factors.

5.4 Further research

This study opens several promising directions for future research on CS among trilingual speakers. First, as the findings are regionally specific to NA, future research should investigate other multilingual contexts—such as Europe, the Middle East, or Sub-Saharan Africa—to determine whether the CS functions identified here are consistent or variable across regions. Second, because

the data were collected in Hungary, where English holds more prominence than in the Maghreb, further studies should examine MA–French–English speakers residing in their home countries to assess how local language environments influence CS behavior. Third, while this study employed semantic and cultural-cognitive approaches, re-analyzing the same data using alternative frameworks—such as psycholinguistic models that explore cognitive load (e.g., Matras, 2000) or structural approaches focused on morphosyntactic constraints—may yield additional insights. Given the diversity of applicable frameworks, future research is encouraged to adopt integrated, multidisciplinary approaches for a more comprehensive understanding of CS. Lastly, considering anticipated language shifts in the Maghreb—where Arabic is expected to remain dominant and English to rise in prominence as a global, non-colonial language while French potentially declines—ongoing research into the region's evolving multilingual landscape is both necessary and timely.